

Cultivating a Culture of Virtual Teaching and Learning: The Case of First-year Accounting Course

Onesmus Ayaya¹, Gladys Ingasia Ayaya²
University of Limpopo¹, St. Stithians College²
South Africa

Abstract

Before the pandemic, teaching and learning at the University of Limpopo were primarily lecture hall-based. This paper informs how first-year accounting students at a rural university in South Africa were guided from contact-based classroom lecturing to a new culture of virtual learning due to the COVID-19 lockdown restrictions that the government imposed. The researchers used the Blackboard learning management system to redesign and offer the accounting module to include self-grading exercises and other support structures. Data were collected and analysed into themes to establish first-year students' remote learning experiences. The findings showed that the needs of students in a professional certification scheme did not change with changed delivery mode. Although students did not mind using the Blackboard as the university's preferred platform for teaching and learning, most students struggled with access to learning because of connectivity issues and a lack of data bundles (a socio-economic issue). This led to stress, which was exacerbated by the fact that they did not have a physical support group to turn to except for the online platform that appeared impersonal. However, the participating students found out that activities such as self-graded two-hour tests and concept tests helped them understand the content better, and most of them improved their performance.

1. Introduction

The year 2020 will go in history as the year of the pandemic that brought about unprecedented teaching and learning methods, especially for students in rural areas of Africa. Face to face (contact-based) lectures ceased to be offered because of the COVID-19 pandemic, and Higher Education Institutions (HIEs) across South Africa postponed contact-based classes in preference of remote teaching and learning. Although the sudden shift to remote online learning permitted teaching and learning to continue during the pandemic, it was a sudden transition under unforeseen circumstances. The university course facilitators did not have a warning or time to prepare their teaching resources from contact-based to online. This sudden shift created confusion and frustration for students, compelling universities to offer short courses that would prepare academic staff to adapt

to the new norm. Students felt that they had signed up for contact-based courses. However, the unprecedented circumstances were coerced to students and lecturers to access digital devices and log in to cloud-based learning management solutions if they were to continue their training. The digital devices had not been budgeted for. This created problems, as evidenced by emails and calls received by the lecturer. At the same time, learners were required to evacuate university hostels to their homes for fear of the virus spreading in the hostels. Many students at the University of Limpopo live in rural-based communities that lack stable internet connections or access to devices. The inadequate access to the ICT services, combined with the uncertain study environments (both in terms of the impact on their training programmes and health and safety of themselves and their family members), accounted for a significant source of anxiety and stress [1]

Evidence drawn from the pre-COVID-19 era suggests that online teaching and learning is more challenging than conventional contact-based teaching and learning [2], [3], [4], and [5]. The sudden transition might cause discomfort for instructors and learners. Although some lecturers and learners may feel comfortable embracing the remote teaching phenomenon, some may even find it an appropriate and effective mode of training. However, the nature of a course or discipline plays a significant role in online teaching and learning delivery. Notably, science courses require experimental laboratory settings, and, therefore, contact-based sessions may be preferred. This was recognised by universities in SA when they allowed medical students to return to residential training during the first wave of COVID-19. Likewise, an instructor's technological proficiency and campus information infrastructure can play an essential role in online teaching and learning. Therefore, the national department of higher education and training worked with universities to offer crash training programmes to improve the ICT proficiency of the academic staff. [6] and [7] have noted that online teaching and learning comes with challenges such as (a) a feeling of isolation due to inadequate interactions among peers; (b) missing out on experiential learning activities; (c) course instructors' inadequate presence and (d) timely academic and administrative support to learners. The authors noted instances of delayed responses to student inquiries from

administrative support staff teams. Instances of academic staff printing already uploaded student answers for manual grading were also noted. Consequently, the unprecedented shift from contact-based teaching and learning to remote learning (including assessment) certainly led to experiences that need to be explored and documented to serve as a basis for further refinements in students' learning experiences.

To this end, this case study explores and documents the course instructor's and students' journey of transition from contact-based teaching and learning to a new culture of remote teaching and learning using the Blackboard as the learning management system and the university's preferred mode of delivery. The rest of the paper is organised as follows: **Section 2** covers the problem statements that feed into the context of the study; **Section 3** looks at the research design; **Section 4** gives context to the study; **Section 5** provides us with an understanding of modes of delivering accounting; **Section 6** examines the research methods; **Section 7** onwards presents the results and discussion of results respectively. The paper ends with conclusions, limitations of the study and recommendations.

2. Problem statement

Higher education institutions (HEIs) are experiencing pressure to embrace virtual teaching and learning to meet students' training needs and mitigate against time loss. Course facilitators face increased pressure to deliver the teaching and learning mandate using the available resources and virtual platforms. The students' educational experiences require research by investigating the question 'How can transitioning to online teaching and learning of an accounting module for first-year students at a rural university be improved?' Answers to this question will help propose, considering teaching and learning practice options to make virtual teaching and learning a meaningful educational intervention beyond the COVID-19 lockdown period.

The course facilitators witnessed unstable login and average stays from course participants. The course facilitators reviewed reports from the online learning platform to determine the length of a student stays in the virtual teach session. The logins fluctuated from 36 to 101, with an average stay falling within the range of 35 minutes to 104 minutes for training sessions scheduled for 120 minutes. This pointed to possible problems that could affect the effectiveness of course delivery.

From a review of reports from the Blackboard (summarised in Table 3), students battled to remain logged in during the duration of the scheduled lecture sessions. On the face of it, this seems to impact teaching and learning if students lose connectivity and have to re-login multiple times due to poor connectivity or other factors. In a class of 138 students (those who actively completed assessment tasks), at no time did the class

attain 100 per cent attendance. 101 out of 138 was the best class attendance experience. Modalities of ensuring that no learner is left behind had to be explored, hence this research. Table 1 summarises the case study research conceptualisation components, including the research questions and the phenomenon investigated. **Table 3** demonstrates the existence of erratic logins by learners.

3. Research questions and objective

The following questions guided the exploration and documentation of student perspectives:

- What are the online learning experiences of 1st year accounting students?
- How can we effectively cultivate new virtual teaching and learning culture for an accounting module for first-year students?

Given the above research questions, the following were the study objectives:

- To explore remote teaching and learning experiences faced by first-year accounting students.
- To explore and recommend opportunities for cultivating a culture of virtual teaching and learning for the benefit of first-year accounting students.

4. Case context

The University of Limpopo was a former "black only" university during the pre-1994 days of apartheid. It mainly attracts students from rural and marginalised communities due to its rural setting in a municipality that is fast growing. Schooling and education in the area have been scored among the poorest performing provinces in the country, with most students arriving at the university from high school in the catchment area with minimum basic university enrolment pass.

The transition from high school to university is a new experience due to the COVID-19 pandemic. Because many of the students come from impoverished backgrounds, they do not have access to sound technology. They would rely on a cellular phone to access their online lessons as opposed to a laptop, and to make matters worse, they have limited access to data bundles, yet their families do not afford Wi-Fi (wireless internet) connections. The students were only used to contact teaching but were expected to move to online learning as the only mode of delivery without prior exposure or training. The study is, therefore, a case study.

The financial accounting for first years is a foundation course with contents related to courses offered in the Bachelor of Accountancy qualifications. As summarised by the qualification registration with the South African Qualifications Authority, the programme

Table 1: Research design conceptualisation

Component	Description
Research problem	First-year accounting students enrolled at the University of Limpopo come from an economically poor background characterised by a digital gap, resulting in no prior use of remote teaching and learning platforms. The first-year accounting course facilitator requires a tested mechanism, the new norm, to cultivate a new online-based culture of teaching and learning.
Research question	<ul style="list-style-type: none"> • What are the online learning experiences of 1st year accounting students? • What can be done to change (maintain) the online learning culture of these students? • How can a culture of online teaching and learning of an accounting module for first-year students be cultivated?
Research aim	<ul style="list-style-type: none"> • To explore remote teaching and learning experiences faced by the selected first-year accounting students. • To explore and recommend opportunities that cultivate a culture of improved virtual teaching and learning for the benefit of first-year accounting students.
Context	Students enrolling for the Bachelor of Accountancy degree programme at the University of Limpopo are drawn from high schools in rural South Africa. The students had limited prior remote teaching and learning experience. The course facilitators had limited use of virtual teaching resources and had to undergo a crash training programme on using online platforms. The digital gap was presumed to exist given the survey requesting students to receive devices procured through the University of Limpopo.
Propositions	Students' experiences are valuable in improving teaching and learning effectiveness. Course facilitators' experiences are informative in improving teaching and learning effectiveness.
Phenomenon	First-year accounting students' virtual teaching and learning experiences
Unit of observation	The questionnaire completed by the participating students
Methods	We employed a qualitative approach and an interpretive paradigm to explore student experiences with remote teaching and learning activities.
Logic linking the data to the propositions	Learners and course facilitators command knowledge regarding the teaching and learning experience. A course facilitator's essence of being can be gained from the needs served and tools used to serve the students. Participatory theory lenses were useful to link the data to propositions. Sensemaking is premised on a course, and participants should help the course facilitator investigate and document the learner experiences to guide teaching effectiveness.
Criteria for interpreting the findings	"Zooming-in" and "zooming-out" within the constant comparison approach to creating themes emerging from the qualitative data collected. In addition, Wegner's concept of community of practices provided the required lenses to attach meaning to the findings
Definitions: [see to dedicated session]	
<i>Source: Adapted from [8]</i>	

architecture provides for the foundational nature of the first-year accounting.

From the programme architecture, the researchers noted that the Bachelor of Accountancy programmes prepares students for a professional accountancy

certification offered by the professional bodies affiliated to the International Federation of Accountants (IFAC). The discussion of the environment of this noble mission is beyond the scope of this paper but is well known to the researchers. The setting and players is summarised in

Figure 1. It suffices to state that the contact-based setup provided for student mentors to assist the first-year accounting students in calculating their overall grades by analysing the marks for tests, homework, and presentations. This was not possible in the virtual environment. The student mentors were seasoned students who may provide guidance that they gained from their first-hand experience. The teaching faculty and learners' interface with professional bodies. Interface with professional bodies or government remained via virtual means during COVID-19 lockdown. Table 2 summarises the needs and services required for the training environment of a degree leading to professional certification. The results are from a survey done from different stakeholders in the learner's professional certification journey and interfaces summarised in Figure 1.

Table 2: Understood student needs, services, and channels

Understood student need	<ul style="list-style-type: none"> • Recognised qualification • Access to learning and teaching materials • Recognition and reward • Support for workplace learning • Peer support • Fair and equitable access
Products and services for meeting student need	<ul style="list-style-type: none"> • Tuition services • Access to web-based resources • Monitoring of workplace mentors • Virtual meeting places • Programme offerings registered on the national qualification framework
Delivery channels	<ul style="list-style-type: none"> • Web-based training • Training rooms for contact-based, • Postal services, • Telephone, • video conferencing,

Source: Researchers' synthesis of the survey results from students and other stakeholders in Figure 1.

When the teaching and learning transitioned to the virtual platforms, the course facilitator had to re-establish that the students' needs did not change. If the student needs did not change, we needed to understand the extent to which the students' needs were being met, given the altered delivery channels of virtual teaching and learning platforms. This was done to locate the role of different actors, as shown in Figure 1.

The programme's structure was designed to achieve the higher education outcomes of producing human capital in line with the professional certification requirements of accountancy bodies. The professional certification requirements tend to reflect the times and the demands of the labour market. Student progression is a critical factor in measuring the effectiveness of

teaching and learning interventions. The programme design refers to the national qualifications' framework equipped with a capacity development approach. To this end, providing students with capabilities entails (i) engaging the students during their study – through practical work tasks; (ii) exposing (in the form of traineeships) the employing organisation to new talent from the programme; (3) offering simulated work experience opportunities; (iv) involving the community; and (v) enhancing the skills, attitudes, and knowledge of students to reflect the demands of the profession.

5. Online learning vs contact lessons for accounting students

Traditionally, accounting is viewed as a meticulous subject requiring a systematic approach to recording, reporting, and analysing information full of conversions based on accounting principles, requiring teaching in specific rigorous methods [9]. Traditionally, this was carried out in the classroom with face-to-face teaching from textbooks and illustrated on the Blackboard. Over the years, researchers have tried to develop ways that could enable the learning of accounting to become more student-centred. One such method was applying blended learning [10] and [30]. Blended learning involves supplementing the use of technology in teaching with face-to-face teaching. [10] maintain that blended learning incorporates the state-of-the-art devices and technologies offered by online learning with the collaboration and participation granted in the excellent traditional learning. For example, students can use social media to learn about financial securities exchanges. The lecturer can use virtual chats to post important information or videos that demonstrate positive results while combining instruction methods with student activities to enhance learning [9].

The move to remote teaching and learning required course facilitators to have a set of skills and abilities to teach online, namely pedagogical skills, content skills, design skills, technological skills, management, institutional skills, social and communications skills [12] - skills which, if missing makes it hard for learning to happen effectively on the online platform. Most course facilitators in the school of accountancy, University of Limpopo, are not trained to serve as educators. Albrahim's research [12] contends that for effective teaching with technology to occur, course facilitators need to have a body of knowledge resulting from a complex interaction among the knowledge of content, pedagogy, and technology.

Although research shows that most students prefer to be taught in person [13], as more students are getting acquainted with online learning, some are finding it not to be student-centred, hence, not liking it [14].

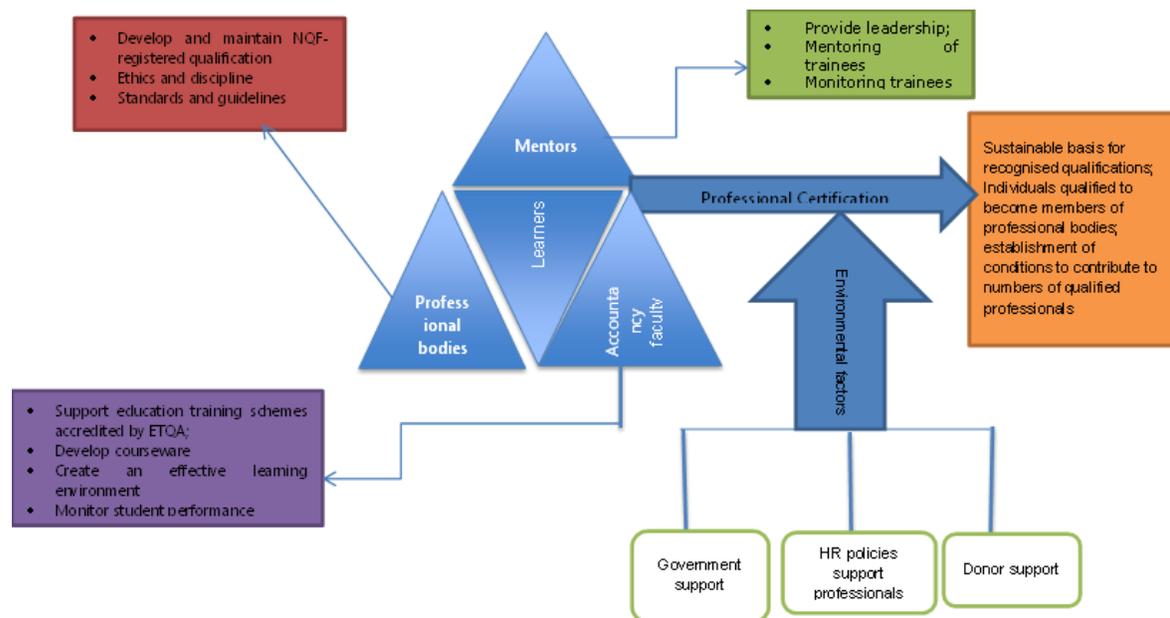


Figure 1: Learner focus during virtual teaching and learning in a professional certification environment

The one strength of online is the possibility of studying from anywhere [15, p. 21] regardless of location if they have access to connectivity. This provides flexibility in emergencies like sickness, pandemics, and inequalities with regards to the relative affordability of university fees and the provision for those with difficulties of fitting in the traditional classroom with an alternative.

Research shows that some students work better on their own, in their own comfort and flexibility, allowing them to self-regulate [17]. A practical subject like accounting requires students to learn through practice at their own pace, allowing them to spend more time on challenging concepts and less time on the sections they understand while in the comfort of their home environment. In the case of this study, challenging concepts are tested through online concept tests. However, self-study requires intrinsic motivation and self-regulation on the part of students. It requires independent planning, monitoring, and evaluating oneself regarding their cognition and learning strategies [18], especially regarding non-synchronised learning activities.

Most of the first-year students from rural South Africa are more acquainted with contact-based training lessons from their high school experience and may find online classes impersonal. Research shows that technology can support students with “keeping up with what is happening in class; making them feel they are an integral part of learning tasks administered during the

lecture time; reducing their sense of loneliness and isolation; decreasing anxiety; and keeping up social connections with their classmates.” [19].

Virtual learning has proved to come with its own challenges, especially for remote and rural areas like is the case of Limpopo. During the COVID-19 pandemic, research has documented the general challenges experienced by virtual learning to include downloading errors, installation errors, login issues, audio/video problems, monotonous and unengaging lessons, one-way instructions, too much theory with less practice, a lack of community, difficulties with structuring time, issues with the management of the systems of learning, and the list goes on ([14]; [20]). There are also the challenges of the course facilitator not being vested with pedagogical approaches that either enhance or deter learning since some lecturers are still apprehensive about technology or online learning [16]. This can pose a danger when it comes to designing good online assessment methods due to their limited advancement in the technological application. This can then limit students’ interactions with their peers and their ability to learn from one another, yet peer interactions are said to promote academic rigour.

Vygotsky’s social learning theories talk of how students benefit from learning from each other, especially in practical subjects like accounting. The overall social development gained from onsite learning that includes the rich social life and sense of belonging to a community ([19]; [21]) are also a part of

developmental growth. These aspects are embedded in the conceptual thinking reflected in environment of training students towards the professional certification referred to earlier.

Online learning for students that are not self-motivated and rely on social learning or in-person lectures ends up in distractions from other non-school related activities, the submission of rushed work that lacks depth, and the missing of deadlines [16]. This is also because virtual learning tends to give overly detailed instructions as course facilitators try to avoid being misunderstood, which leads to giving too much reading that is time-consuming for students who are already struggling with reading [18]. Providing such students with various platforms for collaboration with other students to consult each other or their teachers while studying online, for example, live debates, reflective journal entries, peer reviews, discussion boards, and video or audio teleconferencing [19], giving them a sense of belonging. Course facilitators from the faculty must embrace these aspects when they design coursework. Whether online or onsite, the Universal Design for Learning [30] recommends that students need to be exposed to multiple ways of representation, multiple ways of engagement and multiple ways of expression. The downside is that virtual teaching and learning platforms tend to require high levels of an organisation and can be overwhelming for students who need structure and support.

6. Research Methods

The purpose of this exploratory case study is to examine the students' perspectives on their experience arising from the move from face-to-face learning at high school to remote teaching and learning at a higher learning institution. The single case study was selected because of its unique features [8]. Literal replication was not necessary in this instance, and the results were to inform the practice of the course facilitator and build a future case of a theoretical replication stage to explore and confirm or disprove the patterns identified in the initial case study research. [8] maintains that a case study facilitates communication of the experience of different actors in the case boundaries through narrative and situational descriptions. We preferred a single case study approach because it enabled us to answer what, how and why type of questions while considering how a phenomenon was affected by the context within which the learners transitioned from high school to the higher education institution. Also, the data collected in the case study design is typically a lot richer as it permits follow up inquiries to enhance the depth [22].

The article uses Wenger's (1998) concept of 'community of practice' (COP) as the context in which the individual student participates in the virtual teaching and learning activities [23]. Wegner's model adopts the

notion of teaching and learning as a social experience requiring a learner to participate in a COP [24]. This model attends to the teaching and learning practices, which Wenger christened as 'participation'. Discussions of teaching and learning as a social experience can also be linked to the capability development approach to education. For example, a first-year student who enrolled to study towards a Bachelor of Accountancy qualification should be inclined to develop his expertise to become an accounting educator or an entrepreneur with a solid ethical base.

6.1. Population and sampling

The 2021 teaching and learning activities in the first-year accounting targeted population a population of 184 registered students. Thirty students dropped out in the first three weeks, leaving a class size of 154. The dropout was detected during the first concept test and the first assignment grading. The data collection procedures targeted the whole population of 154 students. Sixty-five students returned their responses to the semi-structured data collected instrument, which is discussed in section 6.1. The researchers undertook a follow-up process with 28 students.

6.2. Data collection procedures and instrument

The data collection techniques employed were: (i) course facilitator's discussions with students during lecture sessions, (ii) course facilitator interaction and observations with students, (iii) a semi-structured questionnaire (N = 65) completed by students who qualified to write their first-semester summative assessment, and (iv) assessment results. Assessment results combined both formative and summative assessment scores that the school administration uses to determine academic progress. The researchers have available the data collection instruments are part of supplementary materials to this paper.

6.3. Data analysis

The study followed a qualitative inquiry analytical technique requiring that the collected data be ordered in an evocative way [25]. This is what we refer to as qualitative data analysis in an interpretivism paradigm. Through qualitative analytic procedures, researchers turn qualitative data into the comprehensible and discerning analysis. The coding work commenced with posing the questions such as what, who, how, when and for whom so that we could give short phrases to the data we collected. Our coding started with initial virtual interaction with the students. Writing of notes, as the teaching and learning went on, helped with the coding process. We also read and re-read the responses received to develop themes. Thematic analysis is supported by

[26], who have favoured it as an appropriate procedure of analysis for targeting to comprehend experiences, thoughts, or behaviours across a data set. This was complemented by narrative analysis in which participant responses were retold concerning the research questions and objectives to make sense to the reader. In addition, we examined how the respondents arrived at perspectives they expressed both verbally and in writing when prompted to respond. This approach allowed the researchers to establish indications of preconceived ideas about what virtual teaching and learning entailed.

6.4. Ethics and reliability

A significant issue in the case study is the enhancing conditions related to qualitative research rigour in the design quality. Validity has three aspects (construct, internal and external) [8]. In addressing research validity, we used opposing explanations, triangulation, judgement models and critical generalisation as recommended by [8]. Reliability refers to the consistency with which research techniques and procedures are applied to enhance the trustworthiness of the conclusions drawn in a qualitative study [27, p. 601]. We achieved validity and robust results by following the data collection and analysis steps. A period of two months was used to follow up with 28 informants to confirm the findings. Research rigour and reliability were achieved through triangulation methods by comparing what the students said in the questionnaires, backed with course observations and assessment records. Ethical protocols were observed. The informants were required to consent because their participation was not compulsory.

7. Findings

The researchers considered two main styles of writing up the qualitative study findings. This was done by simply reporting key findings under each identified theme using verbatim quotes recorded or provided in the returned questionnaires. The findings are further organised under the subheadings of the research objectives of:

- (i) Exploring and documenting virtual teaching and learning experiences of first-year accounting students (see section 7.1).
- (ii) Identifying and recommending opportunities for cultivating a culture of remote teaching and learning for the benefit of first-year accounting students (see section 7.2).

7.1. Exploring and documenting virtual teaching and learning experiences of first-year accounting students

7.1.1. Technical challenges hampered students' access to learning. To change the mode of delivery to online,

obviously having the right devices to use, and connectivity is of utmost importance. The study found that all the students who responded had access to a device of some sort, with almost all students having access to a cellular phone. Most of them had access to a laptop, and a few mentioned that they had access to an iPad. Some of them had access to two devices, while others had only one. About half the students mentioned that they had either good connectivity or access to Wi-Fi and, therefore, had no significant issues tuning into the live lectures.

The students mentioned that the university had supplied them with 10GB of data bundles to last them a month, which they mostly found to get depleted before the month ended, forcing them to buy top-up data bundles. The top-up option was not affordable for most of the informants who chose to contribute to high absenteeism rates as was seen with the high absentee rates. One of the student respondents:

I rely on data bundles. The university provided the data for me, but it is not enough Because it was finished before the month could end. I could not scan assignments for uploading. That causes me to buy data with my money so that I can attend and catch up with other students.

They also reported issues with connectivity, stating that data bundles were not always reliable and sometimes kicked them out of live lectures, in the middle of a lesson presentation. Connectivity issues seemed to worsen, especially in the more remote parts of the country, where the telephone signals were weak. Such students mentioned that they had to wait till midnight when connectivity was much better for them to listen to the lecture recordings.

Fortunately, following requests from the course facilitator, some of the students who came from very remote rural areas with no access to Wi-Fi had been allowed back to the university residence so that they could have access to Wi-Fi connectivity regardless of the lockdown and closure of the university to onsite classes. As one informant observed:

The quality is good. The problem is that if the document that the lecturer was using to teach during the class does not appear clearly, I won't be able to tell. Because I would be alone watching those recordings.

A critical review of login and attendance practices showed that out of a class of 128 students, 82 students consistently logged to attend. A check on the submission of class exercises, 20 minutes after the class, showed that 67 students consistently uploaded their class exercises on time whenever the due date was during normal office

hours. Eighty-nine consistently submitted their take-home assignment on time. Table 3 shows the login practices per session delivered during a 12-week semester. During formal testing and examination time, about five to seven students could email the course facilitator to report difficulties they encountered in uploading the scanned pages of their answer scripts.

7.1.2 Blackboard was found to be a reliable platform for presenting virtual lessons. For a successful shift in a learning culture, the selected mode of learning needs to be desirably attractive and easy to apply. There was a consensus among the informants that Blackboard functioned well as a virtual learning and management system. The students mentioned that it was of high quality and that the presentations were with clarity. Most of the problems they acknowledged were to do with their connectivity, as opposed to Blackboard itself as a learning and management platform. The quality of presentations, however, at times depended on the documents being loaded. For instance, if the presentations were not clear, the student struggled to follow the flow of the contents. The students were also happy with the fact that lecture recordings were a resource that allowed them to go back to repeatedly to recheck their command of the subject matter alongside self-study. One informant observed that:

It was very effective, and Blackboard has great features that make it even more interesting and effective, such as audios, discussion walls and chat boxes.

The noted limitation of the recording was that the recording was not accompanied by a discussion point raised in the chat box module of the Blackboard.

7.1.3. Virtual learning introduced stress that caused students to be anxious about their learning. Students found submission of test and examination scanned scripts stressful under time constraints of 15-20 minutes. They complained of network connectivity issues that caused them not to complete or submit work on time. Those who downloaded or handwrote their tests found scanning into one document and loading it online to be a challenge, data running out in the process of submitting, or electricity failing due to load-shedding. The course facilitator noted, on average, four to six late submissions of scanned test and examination scripts.

Students complained of the inability to consult due to connectivity problems; many of them longed for face-to-face classroom consultations that gave instantaneous access to information and affirmation. On the question of consultations with the course facilitator, one student

observed (in relation to during class and after class consultations) that:

Consulting online was a challenge for me, I prefer contact consultations where I get to clearly state and show my difficulty. With online consultations, I sometimes felt like the lecturer did not get my question and I would usually be discouraged to further consult.

Other informants noted that:

when I used data during the period, I was at home due to the outbreak of the Corona Virus, I could not attend most of my classes because the Network was really bad and unreliable, but when I was back on campus, I attended my classes perfectly because the Wi-Fi was reliable and steady.

The option of using Microsoft Teams or Zoom were available to students for consultations after formal lecture sessions. A limited number of students used this platform. The limited use of these platforms was attributed to a lack of knowledge on how to use them and data usage demands, hence, the need to consult after formal lecture sessions.

7.1.4. Students were conditioned to face-to-face teaching and had mixed feelings about virtual learning. Change is a process that requires time to adjust, but this was not the case during the pandemic. However, students found virtual learning to have advantages and disadvantages. On the positive side, they found that recorded lessons enabled them to tune in at their convenient time, especially if there were connectivity issues during the time of live presentation. The recordings came in handy also during difficult circumstances in their families during the COVID-19 pandemic, enabling them to listen at their convenience if they had travelled, without having to contact their course facilitator. Online learning was found to provide safety during the COVID-19 pandemic as they felt safer at home. The course facilitator was flexible in allowing an extended time for the submission of assignments.

On the downside, students generally preferred face to face lessons with the course facilitator as they felt that two hours in front of a screen brought fatigue for some of them, and the human element of face to face was more reassuring. There were also limitations with connectivity issues and data shortages that led to them feeling that the learning system was ineffective and stressful. Lesson presentations were also mostly one way, as the students didn't have many chances of engaging, except for the

Table 3: Summary attendance and logins

Session date	Duration	Lecture topic	Login	Average stay	Average No. of Logins
June 21(PM)	120 minutes	Revision class	36	35 Minutes	2.5
June 21(PM)	120 minutes	Bank reconciliation	58	60minutes	2.6
June 14(AM)	120 minutes	Internal control principles	65	65 minutes	2.2
June 14 (PM)	120 minutes	Inventories & VAT	70	72 Minutes	2.6
June 9 (AM)	120 minutes	Cost flow assumptions	93	80 Minutes	4.04
June 7 (PM)	120 minutes	Presentation of receivables	87	40minutes	2.45
June 7 (AM)	120 minutes	Trade receivables & VAT	86	95 Minutes	2.8
June 2 [AM]	120 minutes	Inventory systems	101	52 Minutes	3.63
May 19(AM)	120 minutes	Merchandising operations &VAT	90	65 minutes	4.2
May 17 (AM)	120 minutes	Review session - adjusting JEs	87	54 minutes	3.45
May 12(AM)	120 minutes	Adjusting and closing entries	97	110 minutes	5.8
May 10 (PM)	120 minutes	Year-end accounting tools	88	85 minutes	3.85
May 10 (AM)	120 minutes	Year-end closure of books	99	91 minutes	3.75
May 5 (AM)	120 minutes	End of year accounting process(T)	97	94 minutes	4.24
May 3 (AM)	120 minutes	Conceptual framework & adjustments	86	90 minutes	3.73
April 28 (AM)	120 minutes	GL and trial balance (T)	86	97 minutes	6
April 26(PM)	90 minutes	Theory questions in accounting	66	49 minutes	3.03
April 26 (AM)	120 minutes	Recording process and general journal	72	104 minutes	3.7

April 14(AM)	120 minutes	Accounting process	91	95 minutes	5.76
April 12 (PM)	120 minutes	Conceptual framework of financial reporting	83	76 minutes	3.84
April 12 (AM)	120 minutes	Financial statements and careers in accounting	100	94 minutes	5.21
April 7 (AM)	120 minutes	Business transactions and equation	98	97 minutes	5.17
Mar 31 (PM)	120 minutes	Accounting in action - uses	85	84 minutes	4.29
Mar 31 (AM)	120 minutes	accounting in action - practice pillars	87	62 minutes	4.66
Mar 29 (AM)	90 minutes	Introduction lecture	70	70 minutes	4.61

Source: Researchers' synthesis of attendance registers on the Blackboard solution

chat box, which they felt was limiting for those using a cellular phone as well and that typing a message took longer but did not always express the exact point when spoken because the lecturer would answer the questions summatively in themes as opposed to answering specific questions to individuals. The mixed feelings were evident in the remarks from the student informants as detailed below:

They are not effective. Attending online for almost 2 hours for each subject is not nice, and sometimes my phone doesn't work well with the mic, which makes me fail to ask the question that I need to ask or answer the question that was asked.

And another one noted:

It was effective because the lessons were greatly rooted in the chapters we had to cover, but it was challenging because the classes were too long, and it's hard to listen to something online for a very long time and end up losing interest.

However, given that they did not have much choice due to the COVID-19 pandemic and lockdown regulations, students appreciated that once they understood how it worked, they benefited from listening

to the recorded lectures, leading to improved scores in the summative assessments. Of the 128 students who qualified and attended summative assessments, only three students failed.

7.1.5. Students missed the culture of engaging in social interactions in the classroom. They stated that they greatly missed social interaction associated with face-to-face contact lectures during residential training, as well as sitting with their friends, as noted:

I prefer studying in a group. Online learning made it very difficult for me to an extent where I would feel depressed and not motivated to study.

They missed having someone affirm their work, in-person, during group discussions, and for social support.

7.2. Identifying and recommending opportunities for cultivating a culture of remote teaching and learning for the benefit of first-year accounting students.

7.2.1. At first, students found virtual teaching and learning to be impersonal. Students expressed that virtual teaching and learning were impersonal and did not offer them interactions they longed for from pedagogy and modern of learning perspectives. In

general, students missed their classroom contact experiences, citing the instantaneous affirmations and feedback responses that they enjoyed from the course facilitator in contact classes. They also felt the need to have their voices heard in the learning process through online student presentations and live questioning by students instead of being limited to the chat box that was used to demonstrate their level of understanding. Although some of the students felt that all was going well, some felt that the lessons were not interactive enough yet very long for screen time. They proposed 5-minute breaks because they mentioned that if they took a short break on their own, they missed out on what had been taught while they were gone and that they felt lost. They also felt that online teaching required more exercises and time to revise questions because just watching and following the lecturer on the screen was passing, monotonous and not engaging.

7.2.2. The nature of accounting requires practice and questioning of concepts or affirmations, hence any changes in the culture of teaching should provide the same opportunities for practice. Some students felt that the course facilitator had given them enough practice and improved their marks because they could revisit the recorded lessons. Others felt that they needed more training in a face-to-face mode. They felt that it had been difficult to learn some of the software like MS Excel and word processing from their phones, which was a pre-requisite for their training in computer literacy. Also, even though downloading and going through recordings had been viewed as valuable, it was found to be time-consuming, leaving very little time for practice.

Some reported having struggled to understand some of the problematic concepts taught online, and their marks had gone down. They felt that they lacked the instant feedback from face-to-face learning and that practice sessions were less. Some of them admitted that their marks had dropped because they were accustomed to face-to-face teaching. They also felt that the course facilitator exercised patience and understood if they did not submit work on time. One of the informants stressed the need for practical exercises in the following words:

Sometimes I feel like I could be with someone to work things out. Practising and after that showing the lecturer what I was practising using Blackboard is like a long process unlike showing those things to the lecturer in a face-to-face session.

On the question of areas for improvements, one informant recommended that:

The lecturer, after each chapter that we did, should do revision with us and ask us where we didn't understand him clearly. Not to go to the next chapter without doing

revision with us and giving us more questions to treat.

7.2.3. Students expressed a mixed position concerning working in groups. Accounting is a subject that requires practice for students to master the concepts. When asked if they preferred to study in groups or on their own, most of the students expressed that they preferred studying on their own. They specifically mentioned that they preferred to practice through exercise activities individually and then consult group members on the areas they struggled with. The preference for those who preferred individualised study was attributable to the fact that summative assessments were an individual matter. However, many students mentioned that they preferred studying in groups to share different ideas, while others learnt better through assisting others and getting assistance when needed. Others noted that they preferred both individual and group work even though virtual learning was limited with regard to group work. They felt that it was not as effective as in-person group work as they felt that it was not spontaneous and needed to be given more time for group consultations.

The mixed perspectives were noted in the following responses from informants.

I prefer both individual and group learning activities. Online learning is not effective when it comes to group work because some of us tend to understand things easier when people are around, and we can engage with them! I did what was expected of me, like participating and bringing information that was required for the completion of assignments or projects.

And:

I used apps such as WhatsApp to contact my group members, and it was not a great experience as some wouldn't participate. I prefer both individual and group work, as both study methods are effective for me to use. Individually I may sometimes not understand what has been said, and if there is a study group, I can ask for help there.

The mixed preference expressed above points to different learning styles that could be covered in future studies. The present study did not address students' learning styles.

7.2.4. Supplementary material to online class presentations is necessary for the success of virtual learning. Students expressed the need for accessible and cost-effective supplementary material to class presentations. The students had been recommended to download and read two textbooks as supplementary

material to the lecturer presentations and slides. Unfortunately, because of the cost implications of purchasing and downloading, most of the students hadn't afforded to buy the two books, but a few had managed to buy one of the two. Those who accessed the textbooks mentioned that it had helped explain details as an additional resource. Those who didn't download complained of connectivity issues in accessing websites, hence only relying on recorded lessons.

Some of the students who couldn't afford to purchase the books had been creative and explored cheaper alternative sources like YouTube video clips on relevant topics and followed reputable accounting Facebook pages. Others had felt that the lecture notes and slides were enough, while two students had used some old accounting textbooks that they came across.

7.2.5. Self-grading exercises before finalising formative assessment marks were a useful consolidation tool. Students found self-grading exercises to be a reflective activity that enabled them to understand their mistakes without a live lecture. They used the outcomes of the self-grading option as a basis for further consultation with the course facilitator. In accordance with the assessment regulations of the school, students have a right to question marks awarded by the course facilitator after a venue-based assessment. Due to the use of remote assessment, the course facilitator allowed the students to undertake and upload self-graded scripts and the uploaded scanned script submitted within a given due date. The course facilitators used the self-graded score to gauge the fairness and completeness of the course facilitator's grading of student scripts.

Students had been asked to self-grade themselves after submitting their assignments and test scripts. The course facilitators avail a grading guide to enable them to mark and give themselves a mark, which they then submitted, for the course facilitator to use to assess the fairness of his grading before awarding a final score. To this end, all student informants felt that self-grading practise enabled them to see where they had gone wrong and enabled them to self-correct without onerous consultations except for a few areas where they did not understand while using the marking guide in the self-grading process. They felt that it was an effective tool that helped them improve their performance as it pointed to their errors and gave them clarity. On reflecting on the value of this tool, the students mentioned that it was a way of forcing them to go through the questions for a second time, hence an effective tool in reinforcing learning. The students demanded that the practice should be continued:

Yes, it should continue; this forces a student to go through their scripts again and helps them know where they were wrong so they can improve themselves.

The self-grading of scripts was one of the best strategies that made me enhance my performance and continue.

The students saw nothing wrong with using self-grading even though it gave quick and immediate feedback, which was a little stressful two to three days after writing a test. They also mentioned that sometimes they did not understand how the memo had been worked out and needed some explanation on some questions. In such instances, they had the opportunity to consult the course facilitator. If the memo was not loaded in a good format, they struggled to see well, depending on the quality of their devices.

The bad thing about it is that sometimes I just mark myself wrong, not knowing exactly what is happening. Some answers compared to mine are different but can be both correct ones and because of realising that they are different, I find myself marking myself wrong, thinking that I am wrong. It should not be discontinued because it sometimes helps us to see where we went wrong when marking our scripts and can see how we were supposed to be doing that question. It is good and sometimes not good.

Some students, however, found it time-consuming and were unhappy about being penalised for not submitting their self-graded tests on time. The course facilitator demanded participation from all students before finalising grades in the relevant formative assessment task.

7.2.6. Student communication with the lecturer, consultations and provision of feedback was deemed essential. Students found electronic mail communication with the course facilitator cost-effective and useful for getting personalised feedback. The use of email service as a mode of communication received a boost from the short turnaround times. All students have conducted the course facilitator by email. They found it fast, reliable, easy to use and saved on data. It was one of the recommended ways of accessing the course facilitator to get support, as well as using the Blackboard platforms or setting up private online meetings with the lecturer.

8. Discussion of Research Findings

Change in the culture of teaching and learning is not an easy overnight activity. Research findings [11] attribute this to the unpredictable situation imposed by abrupt changes to the socio-economic lives of students, who are victims of poverty and inequality because of apartheid. In agreement with other research findings,

students in developing countries, including South African remote areas, have battled with access to technology and online learning to a great extent. Although they mostly argued that Blackboard, as a medium of the presentation, was a well-functioning platform, their inability to follow the lessons due to technical and connectivity issues on the side of the students posed many glitches in their learning. This, unfortunately, led some students to completely drop out of the course due to a lack of access to technology and connectivity. Some students, who missed online lessons due to the above-mentioned reasons, failed to meet the set required sub-minimum grades for qualifying to participate in the summative assessment activities.

Stress and anxieties were found to be associated with virtual learning, of which some were caused by the pandemic and prolonged screen time, while others were related to procrastination for the non-synchronised lessons that students ended up piling and only listening to when assessments were nearing. This shows that to cultivate a culture that embraces online learning, students require guidance with goal setting for the term and the planning of their daily activities [16]. Self-regulation is not a skill that comes easily, especially when students are left to their own peril [17]. Therefore, there is a need for ensuring that the provision of student support services is made known to them [30], with made mandatory online tutorial sessions and a mentoring system for the ones struggling both academically and emotionally. Students also requested a break in between the long two-hour sessions of online presentations to break off from the screen and refresh.

There were also some notable opportunities that came with the change to online learning. A key finding was the seriousness taken by students in using the self-grading system, which helped them to improve their marks. Students viewed Self-grading as an essential tool in ensuring that they understood the assessment because they were forced to mark for themselves using the memo, grade themselves, after which they were to submit their graded paper as a precondition for their marks being released by their course facilitator, with the objective of getting them to process the concepts and knowledge and identify their misunderstandings [12] and [18].

Students expressed that the move to online offered them the options of both listening to the lectures repeatedly and exploring other resources on the internet. Online courses are popular for students who have multiple commitments in life and can afford good internet connectivity to follow the online teachings. The online avenues that they explored were based on personal interests and included Facebook and YouTube, among others. Providing multiple means of representation of lessons by the lecturer, as well as multiple means of engagement and expression by the students, is a methodology of learning that has been proved by the Universal Design for Learning to be highly effective [30] and is well supported in this research when students

express the interest to listen to social media for elaboration on their understanding and application of concepts taught.

A culture of sharing, consulting, problem-solving and reading is important for the success of the virtual learning of accounting students. The nature of accounting as a subject requires students to be continually practising, questioning their understanding of concepts, and requesting feedback and affirmation on how they are doing [9] and [30]. Therefore, discussions and chats are needed during the presentation [9] and [19]. Students' need for communication and feedback from the course provider was evident, hence the preference for face-to-face teaching by most of the students. If virtual teaching of accounting is to be embraced, a lot must be done to ensure that students have a platform for practice that provides instantaneous feedback and that their voices are heard.

Most students contend that lockdown caused by the pandemic was necessary for the course facilitator's safety and their own. However, many students found it limiting to remain connected when they exhausted their data bundles. They reported an absence of interactive activities that they were accustomed to during their high school days. This finding is consistent with what [28] reported in some studies, which [28] notes that most students faced anxiety while maintaining their motivation levels during the lockdown. In this study, the anxieties were on an increase when students were faced with assignment submission due dates. Some reported that their anxieties were exasperated when they experienced complications with access to the internet or digital devices or when they were disqualified for not submitting a task on time because their connectivity had failed. It is important to note that students were given email access to their course facilitator, and the course facilitator opened chat rooms and group discussion breakaway sessions to help connect students socially.

If the culture of online learning is cultivated carefully, virtual teaching and learning environments in rural South Africa were found to provide similar opportunities as contact-based sessions with regards to student performance in assessments. This agrees with the finding by [29], who argued that online environments can mirror face to face contact sessions. Comparison of the results from this study with other studies proved that students' perceptions of online learning were consistent with their perceptions of a successful course transition and effective course delivery. A culture that has a mix of learning tasks and opportunities is required for a smooth transition process. In the present case, there is no finding of learning outcomes having been compromised with regards to the students' grades, showing that the transition was well cultivated. This could also be attributable to the intentional learning opportunities and the participation of students in the activities that they were exposed to. Students may have put in a lot more effort because they may have felt that their learning was

compromised or the course content was compromised, hence the consistent results.

9. Recommendations

The following recommendations are pertinent given the study findings:

- (i) The need for supplementary material to lecture slides should be a feature for improved virtual teaching and learning. The materials should be linked to assignments that are submitted for grading.
- (ii) Feedback of marked scripts should ensure that the course facilitator and students are both at par. Continuous and timely feedback is crucial in keeping the students' motivation and participation in learning activities going.
- (iii) Support and feedback avenues should be available to students.
- (iv) Students should have experience with assessment opportunities and structure before they write exams. The structure of assessment tasks and opportunities should start with concept tests, followed by written assignments and scheduled 2-hour tests.
- (v) Students' self-grading assessment experience is vital for learning. The transition to virtual teaching and learning requires students to have a self-grading experience that gives them a chance to reflect on their learning experiences and outcomes. The uploading of self-graded answers provides students with excellent practice to maintain motivation in the absence of contact-based sessions and engagement with the course facilitator.
- (vi) Double contact sessions should allow for a halfway break of 10 minutes, and it should include class activities that keep students alert and interested in the subject matter.

10. Conclusion

For an effective change in the culture of learning, from contact-based learning to online to happen, the overall results of the case study point to the need for flexibility and adaptability on both the side of students and that of the course facilitator. The cessation of residential teaching and learning activities led to both sides' unplanned and abrupt transitional activities to adopt virtual teaching and learning platforms. There was no opportunity for the course facilitator to explore how best to transition to the alternative virtual teaching and learning platforms that were to be offered using the Blackboard as the university's chosen platform. Both reactive and proactive interventions were made, and each party demonstrated and experimented with different options. For instance, while the course facilitator was

proactive in cultivating the culture of self-grading modalities for the students, they (students) on the other hand, were proactively searching supplementation materials that could enhance their learning experience on google and YouTube. Reactive aspects, however, failed to allow for adequate psychological preparation. Hence, this change in the culture of learning required both parties to adopt a growth mindset.

Moreover, failure to have online materials ready pre-pandemic, the lack of technical skills required to use digital devices, exposure to online experience in teaching or learning, and not having the proper infrastructure in place inhibited the navigation of online space from being executed efficiently with the onset of lockdown. The needs of the students did change but by changing the mode of delivery of the course, students were exposed to experiences that they had not had before. As a result, to manage the students' anxiety, the course facilitator had to give more of his time in responding to email messages, addressing student concerns and queries long after official business hours. This is something he would not have had to do in the pre-COVID-19 days. Quick response times to student queries on email was necessary to manage the students' anxiety. It was found that in unprecedented times, a culture of being proactive and supporting students with their change to online learning, if done with student concerns as the central key to teaching, can yield good results and avoid time wastage brought about by university closures during the lockdown.

11. Limitations and directions for future research

The present case study has limitations. Although responses from 65 students were commendable, the researchers could not document the perspectives of students who did not provide their answers. We argue that given that the participation was voluntary, about half the students elected not to participate. In addition, we did not get to know the perspectives of the students who dropped out of the course during the first three weeks of training. Questionnaires were mailed to them, but they did not deem it necessary to participate. From the methodological perspective, the present case study findings should have been compared to two other case studies at other universities to enhance validity. The results of the present study cannot be generalised. The mixed responses to group-based learning activities require a study on learning styles among the Bachelor of Accountancy students. The present study did not explore the learning styles appropriate for the transition to virtual teaching and learning. This should be the case given the number of students that detested long lectures calling for comfort breaks.

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