


# Shifting From Onsite to Online Summative Assessment at the University of South Africa

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## ABSTRACT

The discourse around online summative assessment has become one of the major issues in open distance learning (ODL) worldwide. There is a lack of major research in online summative assessment in environmental education (EE) module for the bachelor of education (B.Ed.) students in ODL. The purpose of this study was to explore online summative assessment of EE module for the B.Ed. students at the University of South Africa (UNISA) during COVID-19. This study employed a qualitative approach, purposive sampling, and an interpretive paradigm. Data were ethically collected using participant observation and documentation. It was thematically analysed. Online summative assessment policies were in place before the outbreak of COVID-19, but policies were not implemented. The university quickly transitioned from face-to-face to online summative assessment due to the COVID-19 pandemic, and lecturers were trained. Challenges included non-training of students for online summative assessment, corrupt answer books, lack of prompt response from ICT specialist, and connectivity problems.

## KEYWORDS

Connectivism, Environmental Education, jRouter Marking, National Lockdown, Online Summative Assessment, Open Distance Learning, Qualitative Approach, Quick Transition

## INTRODUCTION

The education system has been greatly affected by the coronavirus (Covid-19) pandemic globally which caused a rapid change in pedagogy by accelerating digital learning (Klein et al., 2021). Worldwide, governments called for a national lockdown that led to the closure of schools and higher education institutions. This was done to reduce Covid-19 infection as it was accelerating especially where people were in close contact. The closure of higher education institutions compelled them to transition from onsite to online pedagogy (Crawford et al., 2020; Iglesias-Pradas, 2021). This, therefore, suggests that teaching and learning had to shift quickly to an online approach. Onsite tuition was abandoned to observe governments' Covid-19 protocols such as social distancing. The continued spread of the virus prolonged the closure of institutions beyond what was expected. This affected both formative and summative assessment in institutions of higher learning globally. Universities quickly changed from onsite summative assessments to online summative assessments, but the lecturers and the students were unprepared for this quick change. Online assessment comprises formative and summative assessments at the University of South Africa (Unisa, 2013). This study focuses on online summative assessment for the Bachelor of Education (B.Ed.) students in the Environmental Education (EE) module in the ODL context.

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This article covers the following main aspects: theoretical framework, theoretical base, methodology, and conclusion. The study employed connectivism as a lens and rhizomatic learning approach that helped to examine the summative assessment of the EE module for the B.Ed. students at Unisa.

## BACKGROUND

Many scholars have posited that the sudden outbreak of Covid-19 disrupted the education system globally (Aborode et al., 2020; Davids, 2021; Dhawan, 2020; García-Peñalvo et al., 2021; Klein et al., 2021). South Africa was no exception. The government announced the national lockdown on 26 March 2020 that affected summative assessment in higher education because students could not attend physical venues to write examinations. Before Covid-19, universities had relied largely on onsite tuition and were unprepared for the transition to an online pedagogy (Crawford et al., 2020; Iglesias-Pradas, 2021; Ramírez-Hurtado et al., 2021). The lockdown created pedagogical challenges for African tertiary institutions because they generally used a traditional onsite delivery model (Gurajena et al., 2021) and needed to accelerate the use of digital learning (Klein et al., 2021).

As for Unisa, two approaches to summative assessment had been outlined in the assessment procedures manual before the outbreak of the Covid-19 pandemic, namely, venue-based assessments and non-venue-based online assessments (Unisa, 2013). Despite being an ODL institution, Unisa was, nevertheless, mostly dependent on venue-based (onsite) summative assessment until the outbreak of Covid-19. Venue-based summative assessments were written at designated venues in almost all the provinces of South Africa and students were invigilated, while non-venue-based assessments were administered online without any proctoring. Quality assurance was done through Anderson and Krathwohl-Bloom's taxonomy revised (Wilson, 2016). Unisa, thus, used a blended approach. The outbreak of Covid-19 was a wake-up call for Unisa to transition rapidly from onsite to online summative assessment for all the modules' examinations.

## INTERNATIONAL EXPERIENCES

The Covid-19 outbreak led to the implementation of a complete lockdown by national governments. This had a major impact on tertiary education and the way summative assessment was administered. Higher education institutions had to quickly rethink the way summative assessment should be administered (Almossa, 2021; Daniel, 2020). This suggests that institutions were unprepared to transition from onsite to online summative assessment. In many cases, online assessment was problematic (Almossa, 2021; García-Peñalvo et al., 2021; Khan & Jawaidd, 2020; Klein et al., 2021).

García-Peñalvo et al. (2021) highlighted that the Covid-19 pandemic interrupted onsite pedagogy in higher education in Spain after a month in the second term compelling universities to deliver the academic programmes using online pedagogy. They mentioned that transitioning from traditional onsite to online pedagogy without preparedness for online assessment was a challenge.

In their study conducted at the Universities of Göttingen, Technische Universität Dresden, Technische Universität Kaiserslautern in Germany, and the University of Zagreb, Croatia, Klein et al. (2021) highlighted that Covid-19 seriously affected the tertiary education system and compelled the countries to move to distance learning.

Almossa's (2021) study showed the challenges that Saudi higher education students experienced when engaging with the rapid change in the learning and assessment mode from onsite to online assessment which included stress. Khan and Jawaidd (2020) stated that this type of assessment had been minimally practised, and academic staff had not been trained before they were suddenly compelled to implement the online summative assessment.

Turkish universities appear to be an exception; for example, Senel and Senel (2021) indicated that Turkish universities finished the 2019-2020 spring semester through online tools with no onsite assessment.

In light of the explanation above, it is evident that the Covid-19 pandemic caused a disruption in education. The disruption was mainly caused by the unpreparedness of most universities to administer online assessments.

## THEORETICAL FRAMEWORK

Connectivism theory and rhizomatic learning approach were used to explore the online summative assessment of the B.Ed. students enrolled in the EE module in an ODL setting. Connectivism was used in conjunction with rhizomatic learning approach because Duke et al. (2013) indicated that it may not be considered a learning theory.

Siemens (2017) regarded connectivism theory as relevant in education because it relies on technological networks that enable learning despite disruptions that may occur. Since summative assessment is part of the learning process, educational technologies should connect the students and the tutors before, during, and after assessment. In addition, the educational technologies should enable students to access the questions or download them, answer the questions, and or upload the answer books following the instructions. In his view, it is vital to nurture and sustain connections to allow ongoing summative assessment. Siemens (2017) further described connectivism as a way of managing cognitive tasks by using technology to cope with rapid change and the impact of theories of networks, complexity, and chaos. He defined a network as connections between entities and so-called nodes (individuals, groups, systems, fields, ideas, or communities).

Bell (2011) pointed out that participants such as management, instructors, students, and policymakers should endeavour to integrate technology into formal settings and pursue theories that can inform their actions positively. In his opinion, the use of technology can sustain summative assessment as it allows universities to continue with assessments during chaotic and complex situations like those caused by Covid-19. Connectivism could enable people to use technology to create networks for lecturers and students to cope with the rapid change in approach from conventional to online assessments. Connectivism is, thus, relevant to the current study because it informs stakeholders how online summative assessment could be used during times that require sudden change.

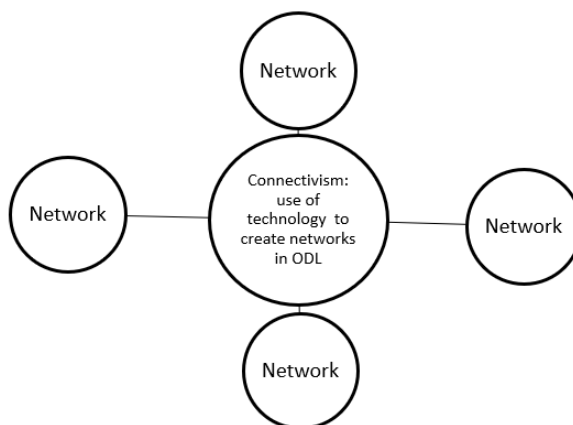
It should be noted, however, that connectivism “might not be considered a learning theory” (Duke et al., 2013, p. 7). Citing Kerr (2006), Duke et al. (2013) maintained that:

*Connectivism misrepresents the current state of established alternative learning theories such as constructivism, behaviourism, and cognitivism, so this basis for a new theory is also dubious. [Connectivism, instead], offers an educator a model or mental representation that depicts something that cannot be observed or experienced directly... . [Nonetheless], it is regarded as an important school of thought directly applicable to the use of technology in the classroom today. (p. 8)*

Despite this caution, it could be said that if connectivism had been fully practised by universities before lockdown due to Covid-19, the summative assessment would have been successfully implemented. This is because it creates networks that enable students to connect at any place and write summative assessments as shown in the figure below.

Rhizomatic learning which involves intrinsic motivation and independent learning experiences forms part of the theoretical framework because, like connectivism, learners or students use technology and connections to learn. In Bozkurt's (2019) opinion, online learning takes place through information and communication technologies (ICT). In an ODL environment like Unisa, ICT is used by both the lecturers and the students because the students learn remotely. Online summative assessments were used by Unisa as an intervention strategy during Covid-19 since there were no venue-based examinations. The lecturers administered online summative assessments, and students needed to connect via online platforms to write the examinations remotely in their respective homes or study sites using ICT. To succeed, students needed to be adaptable and resilient which accords with Cormier's

Figure 1. Network connectivism



(2015) idea that rhizomatic learning develops resilience. Collaboration between the lecturers and students was crucial during these assessments (Silveira, 2016).

## RESEARCH QUESTIONS

This study was conducted with the intention to answer two research questions.

- RQ1: How did Covid-19 affect the summative assessments of the B.Ed. students for the Environmental Education module at Unisa?
- RQ2: How prepared were the students for online summative assessments during Covid-19 at Unisa?

## LITERATURE BASE

The literature review includes a conceptualization of assessment and compares traditional assessment approaches to online assessment, the advantages of online summative assessment, the disadvantages of online summative assessment, and the preparedness of universities to transition from onsite to online summative assessment. Scholars such as Aborode et al. (2020), Davids (2021), and Dhawan (2020) stated that the sudden outbreak of Covid-19 disrupted the education system globally. Klein et al. (2021) maintained that Covid-19 forced countries to move from traditional pedagogical approaches to distance learning. However, unpreparedness of tertiary education institutions was clearly a problem as evidenced in a number of studies (Iwu et al., 2022; Le & Truong, 2021; Marshall et al., 2020). The outbreak of the Covid-19 pandemic was, thus, a wake-up call for tertiary institutions globally to rethink their pedagogy.

### Conceptualizing Assessment and Online Assessment

Assessment is integral to teaching and learning because it establishes the achievement of course learning outcomes by the students (Khan & Jawaidd, 2020). This, therefore, indicates that teaching, learning, and assessment are inseparable. Koneru (2017) defined formative assessment as a continuing process of gathering evidence about students' performance and creating an enabling feedback mechanism to improve their learning. Formative assessment is meant to provide feedback during the process of learning (Khan & Jawaidd, 2020) while summative assessment is used for progression or retention decisions and helps to establish whether students have attained the goals set for them (Dolin et al., 2018).

During Covid-19, summative assessments needed to be administered using technologies to enable students to achieve goals set for them for the 2020 academic year. This is because technology was assumed to be an enabling tool to sustain continuity of teaching and learning and assessment in ODL settings. In addition, Koneru (2017) mentioned that the increased availability of and access to networked technologies allowed ODL institutions to adopt novel models of assessment that are quite different from traditional assignments and examinations. Gurajena et al. (2021) advised that online summative assessment platforms should be secured and students authenticated before they write an assessment, while Daniel (2020) pointed to staff preparation and training in terms of adopting novel models of assessment. This implies that lecturers and students had to rethink and assess whether the digital equipment and platforms that were available to them would enable them to sustain their online teaching, learning, and assessment.

### **Advantages of Online Summative Assessment**

Several scholars concur that online summative assessment provides a range of advantages (Dennick et al., 2009; Elmehti & Ibrahim, 2019; Khan & Jawaid, 2020; Koneru, 2017; Senel & Senel, 2021). Dennick et al. (2009) stated that online assessment can reduce marking loads, fast-track release of results, enable a quick review of results by the examination board, and provide different online quality assurance. A study conducted at the University of Sharjah, United Arab Emirates on the effect of online examination on students' performance compared to paper-based examinations showed the advantages of online examination such as; accuracy in mark calculation and grading, immediate feedback, fairness, security, and limited cheating possibilities (Elmehti & Ibrahim, 2019).

Koneru (2017) stated that the main benefit of online summative assessment was that ODL institutions could conduct proctored examinations to address the security issues for high-stake tests. This suggests that EE module students could benefit from online summative assessment as they were studying in an ODL environment. Khan and Jawaid (2020) pointed to the advantages of Learner Management Systems (LMSs) in terms of the administration of online summative assessment which include multiple-choice questions (MCQs) that can be used to assess low- to high-order cognitive thinking skills depending upon their construction. Large numbers of MCQs may be administered through Google Classroom or Moodle and can be timed while students can receive real-time feedback on their answers. Although pen-and-paper examinations are usually used to determine students' ability to analyse and solve problems, think critically, and be creative, objectively structured practical examinations may be administered online through various LMSs which allow the examiner to insert pictures or videos on which questions can be asked. This expands the type of questions that can be asked (Goldberg et al., 2021) and allows for the assessment of higher-order cognitive skills.

Senel and Senel (2021) mentioned the following online benefits of online summative assessments: instant feedback, ease of editing based on feedback, ease of submitting/responding, control and storage, and providing student inclusivity. Furthermore, in their study on remote assessment in higher education during Covid-19 in Turkey, they indicated that the LMS assessment tools were extensively employed in conjunction with tools that delivered functions in an integrated manner which included communication, interaction, and storage of data. Some of these tools are Blackboard, Edmodo, Canvas, Google Classroom, Microsoft Teams, and Moodle. These tools have been shown to provide several advantages for online summative assessment as shown in Table 1.

Unisa uses an LMS called myUnisa which displays tools for online assessment and uses a program called jRouter for marking (Unisa, 2013). These programs were in use before the outbreak of Covid-19.

This study explored online summative assessment for the B.Ed. students taking the EE module at Unisa. The researcher investigated whether the online summative assessment for the B.Ed. students in the EE module and the university provided the advantages mentioned by Senel and Senel (2021) above. This is because even though Unisa had an online assessment tool as one of the myUnisa tools before the outbreak of Covid-19, the lecturers for the EE module did not administer online summative assessment but still used onsite summative assessment and manual marking. Thus, they were unprepared for the shift from onsite to online summative assessment. This means EE module

**Table 1. Advantages of online summative assessment**

| Advantages                        | Explanation  |
|-----------------------------------|--|
| Instant feedback                  | Markers route answer books to the examination site rather than sending the hard copies to the lecturer who should submit them to the examination section for capturing. Once marking and results processing is done, students can receive results even on their cell phones, therefore enabling timeous feedback. Therefore, online marking is assumed to be faster.   |
| Ease of editing based on feedback | Mistakes could be easily corrected online by the markers and the lecturers timeously.  |
| Cost-effective                    | LMSs afford the students an opportunity to write online summative assessments from the comfort of their homes and submitting without having to travel to the venues. This is assumed to be cost-effective for the students.  |
| Control and storage               | The problem of missing of examination answer books should be minimized or solved as the system registers online summative assessment submission capturing even the dates and times of submission. On the other hand, the LMS resolves the challenge of dishonesty from some students who claimed they wrote the examination when they did not. Administrative paperwork could be also reduced as all the information pertaining to summative assessment would be stored on the system.   |
| Providing student inclusivity     | Practicing computer-based summative assessment enables the use of interactive techniques and multimedia that include images, audio, animations, and videos which may help increase students' intrinsic motivation to write the examination. The use of various interactive techniques and multimedia such as images, audio, and videos provide various learning methods and therefore inclusivity because some students learn and understand better when using images while others learn better when using audio. It, therefore, motivates and advantage all students. |

Source: adapted from Senel and Senel (2021)

students had not enjoyed the benefit of full online summative assessment before Covid-19 despite Unisa having been an ODL institution for many years. If the EE module lecturers had used online systems for summative assessment, the EE students should have enjoyed the advantages mentioned by Senel and Senel (2021).

## **Disadvantages of Online Summative Assessment**

Despite the advantages, several challenges have been identified.

### ***Lack of Awareness Among Students***

Elmehdi and Ibrahim (2019) pointed to a lack of awareness among the students at the University of Sharjah although this should have been addressed before the university decided to implement an online summative assessment. This suggests that students should have performed better if online assessment awareness was done for them.

### ***The Unpreparedness of Universities to Transition from Onsite to Online Summative Assessment During Covid-19***

This was shown by several scholars who highlighted that universities have faced challenges when implementing online summative assessments during Covid-19 (Almosa, 2021; Elfirdoussi et al., 2020; Khan & Jawaid, 2020; Sharadgah & Sa'di, 2020). In Daniel's (2020) opinion, institutions lacked time to prepare for remote teaching, administration, preparing and training staff, and end-of-year assessment. It, therefore, suggests that a lack of preparedness caused some challenges even with the end-of-year, summative assessment.

A study conducted in Morocco on distance learning in higher education by ElFirdoussi et al. (2020) showed that 64.4 percent of teachers said that it was not practicable to set examinations for students from a distance while 81.45 percent of students indicated that they were unable to sit for online examinations. Khan and Jawaid (2020) concurred, mentioning a lack of resources, infrastructure, training, and acceptability that became evident during Covid-19 in Pakistani universities.

Almosa (2021), who conducted a study at Umm Al-Qura University, Makkah, Saudi Arabia on the consequences of rapid change to online teaching and assessment, indicated that online learning led to an online assessment crisis. This is because the online assessment caused challenges for students such as stress, anxiety, and depression as they were forced to shift rapidly from onsite to online pedagogy due to Covid-19.

Sharadgah and Sa'di (2020) explored the perceptions of faculty members at Prince Sattam bin Abdulaziz University, Saudi Arabia, regarding the preparedness of institutions of higher learning education for assessment in virtual learning contexts during the Covid-19 lockdown. Amongst others, their results revealed the following: in terms of preparedness of institutions of higher education, 62.5 percent of faculty thought that universities were not ready for online assessment due to the abrupt and rapid transition to e-learning; 75 percent of faculty agreed that institutions of higher education wavered as they sought to choose the appropriate assessment method after the abrupt suspension of onsite classes; 89.6 percent faculty concurred that institutions of higher education conducted many training workshops on remote assessment preparation in response to the lockdown, however, the workshops only showed how to develop summative assessments on Blackboard without linking them with the achievement of the course outcomes and were rated as a waste of time and that they had shallow substance. Sharadgah and Sa'di's (2020) views align with those of Elmehdi and Ibrahim (2019) on the lack of preparedness for online assessment and linking summative assessment to the expected module outcome, and the lack of assessment security infrastructure to detect plagiarism at Prince Sattam bin Abdulaziz University was one limitation that defeated the purpose of the online assessment.

Among their recommendations were that the university should provide the teaching faculty with professional development regarding e-assessments and invest in assessment security software (Sharadgah & Sa'di, 2020).

### *Security Issues*

Plagiarism and cheating are potential problems with online assessment (Mellar et al., 2018; Okada et al., 2019; Sharadgah & Sa'di, 2020). To address these problems, assessment proctoring software could be installed to allow for technology-based invigilation to prevent cheating during online examinations, although it may be expensive. Koneru (2017) stated that ODL institutions could conduct proctored examinations to address the security issues for high-stake tests. Scripts could be run through a plagiarism checker like Turnitin to determine the level of plagiarism committed.

## **METHODOLOGY**

The purpose of this study was to explore an online summative assessment of the EE module for the B.Ed. students in ODL as a response to Covid-19. This study used a qualitative approach, a phenomenological design, and an interpretive paradigm. A qualitative approach was chosen for a better understanding and explanation of the phenomenon (Rubin & Babbie, 2013). Phenomenology is associated with participant observations which was one of the data collection instruments used in this study. An interpretive paradigm was used as it is central to qualitative research (Willig, 2017) and is viewed as a philosophy that is associated with and influenced by phenomenology. Furthermore, this research design determined the process of data collection, analysis, and interpretation with the aim of producing trustworthy results, as recommended by Rubin and Babbie (2013).

## Data Collection Instruments

Two data collection instruments were employed, namely, participant observation and document analysis. Participant observation data were collected at Unisa between October 2020 during training and examinations and during the supplementary examinations in February 2021. Notes were taken during training in 2020 and during each period when online summative assessments were administered in 2020 and 2021.

Participant observation was conducted when the management, lecturers, and students connected using ICT to establish networks, connections, and nodes as individuals and groups (Siemens, 2017; Silveira, 2016) to cope with the complex chaos caused by the Covid-19 pandemic that led to a shift from on-site to online summative assessment. The researcher observed participants during the lecturers' training through Microsoft Teams on how to write instructions, upload the question papers, and mark online using the jRouter tool. Participant observation was also done during markers' training on using the jRouter marking tool in 2020. The observation was also used when the students connected to write online summative assessments as they answered questions online using ICT (Bell, 2011; Bozkurt, 2019).

The researcher played a close and active role as a participant-observer during the online summative assessment of the EE module for the B.Ed. students because she was the secondary lecturer for the researched module. Many emails and telephone calls were received from the students within a short period of time on the day they wrote the online summative assessment. In addition, emails were received from managers giving directives or reports in terms of online summative assessment while others were from the markers seeking assistance. The researcher received and responded to these emails. This helped to minimize the distance between the researcher and the participants in terms of the empirical study (Seim, 2021).

Documents may be printed, hand-written, or electronic (Marshall & Rossman, 2011). Electronic documents such as Unisa's internal communication (Intcom, a site that the university communicates with its staff through messages and electronic documents), on electronic notice boards, emails, and reports were purposefully sampled to provide empirical evidence and a wealth of information that assisted with answering the research questions for this study.

Ethical clearance was obtained from the College of Education at Unisa before the commencement of the study. This is because observation of ethical principles is a requirement for all researchers (McMillan & Schumacher, 2010).

## Data Analysis and Trustworthiness

The process of data analysis was continuous, and started during data collection, continuing until the completion of the final report. Thematic analysis was employed (Rubin & Babbie, 2013). Analysis of data collected through participant observation was continuously done after each observation of the administered online summative assessment sessions.

The documents were intensively and repeatedly read. They were analyzed to expand knowledge of how online summative assessment of EE module for B.Ed. students in the ODL were administered during Covid-19. Analysis of data was ongoing through the period of online summative assessment.

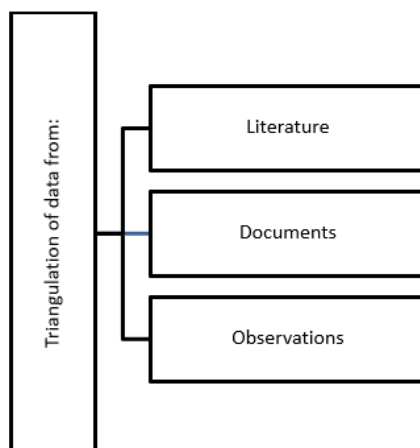
The data were read, analyzed, interpreted, and processed. Similar words were identified and grouped together, coded, and clustered into categories. Two themes emerged from concepts that were identified as data from the literature, documents, and observations that were triangulated. These included the administration of online summative assessment and preparedness for online summative assessment.

For this study, trustworthiness was observed as similar concepts that were identified as data from the literature, documents, and observations were triangulated. Below is a figure that shows how the trustworthiness of this study was observed through triangulation.

In addition, the findings were presented at a colloquium for constructive criticism, while the author was engaged with the summative assessment of the module in question for a prolonged period before the outbreak of Covid-19 in 2020.



Figure 2. Triangulation of data



## FINDINGS AND DISCUSSION

The findings from the literature, observations, and document analysis are presented and discussed in an integrated manner under two themes, namely, the administration of online summative assessment and preparedness for online summative assessment.

### The Administration of Online Summative Assessment

The findings from the literature, observation, and document analysis revealed that the university used a blended approach before the outbreak of the Covid-19 pandemic. An online approach was used for formative assessments, but an onsite approach was used to administer the summative assessments of the EE module for the B.Ed. students. The marking of the summative assessment was also done manually. The preparation of the assessments began with the primary lecture which first administered the formative assessments that were meant to prepare students for summative assessment. In addition, the markers' feedback was posted on myUnisa for students to read in preparation for the examination. The summative assessment was set considering the Anderson and Krathwohl–Bloom's taxonomy revised (Wilson, 2016). It was quality assured by the lecturer, secondary lecturer, departmental quality assurance committee, the chair of the department, and the college quality assurance committee. It covered all the topics because the curriculum was not trimmed. However, this preparation was not for an online summative assessment.

The outbreak of the Covid-19 pandemic led to a national lockdown that affected the approach to summative assessment. Unisa was forced to shift to a full online assessment. ICT played a key role as it facilitated communication and collaboration among the management, lecturers, and students. Announcements were made through email and Intcom to inform the lecturers that digital summative assessments were required with immediate effect and that no blended or onsite assessments would take place in 2020. The students were informed by the university through the LMS mostly through electronic notices, the announcement tool, the myLife email, and SMSs about writing the online summative assessments. This finding supports Daniel (2020) who stated that institutions should communicate with students on a regular basis using ICT to clear up uncertainties caused by Covid-19. The findings on the use of LMS, Intcom, and emails aligned with those of Almosa (2021), Araka et al. (2020), Daniel (2020), Senel and Senel (2021), and Klein et al. (2021) that higher education lecturers had to rethink their pedagogy. The online summative assessments were administered, and marking was done online for the module in question.

The findings revealed that online summative assessment was administered because the university considers summative assessment as the key to concluding the academic year and allowing students to progress. This finding supports Chaudhary and Dey (2013), Jawaid (2020), and Senel and Senel (2021) who found that summative assessment is a cornerstone of tuition. The management, lecturers, and the students collaborated before, during, and after the online summative assessment. The managers provided guidance to the lecturers on how online summative assessment was to be administered and how to deal with ICT challenges, and provided progress reports when necessary. The lecturers supported students during online summative assessment by answering their queries and providing links when needs arose. This result confirms Silveira's (2016) finding that collaboration between the lecturers and students during the online summative assessment is critical.

Findings showed that all the lecturers at the university in question were invited by email for training on the administration of the fully digital summative assessment. The training was provided through Microsoft Teams with a clear demonstration of how to write instructions and upload the question papers as well as set the time frames which were in line with the recommendations of Sharadgah and Sa'di (2020). Question papers were uploaded on the LMS. Results revealed that the examination and the teaching and learning offices sent lists of uploaded papers for confirmation by the specific lecturers as the question papers needed to be uploaded seven days before the date on which the examination was to be written. The students downloaded the question papers, wrote the online summative assessment, and uploaded their answer books for marking. The findings revealed that lecturers were creative and resilient with regard to the administration of the online summative assessment. Students showed their resilience and adaptability in writing online summative assessments, concurring with Cormier (2015) who pointed out that rhizomatic learning assumes that students are resilient.

Findings showed that all the markers were trained to mark online using jRouter as some had not marked online before the outbreak of the Covid-19 pandemic. Markers who marked online for the first time experienced challenges with handling marking tools and were slow. Some markers' challenges were that their contracts had expired. Some markers were faced with challenges of answer books that were corrupt while others could not send the marked answer books to the primary lecturer for moderation. Some students did not attach the declaration forms. The university's ICT specialists were contacted for help but their responses were delayed as they were overwhelmed with such requests. The lecturer created a WhatsApp group for markers to share knowledge and skills and this intervention assisted in resolving some of these challenges.

Marking was done, and sampled answer books were routed to the lecturers for online moderation. Moderated results were processed and announced online. The process of announcing the results was quick, concurring with Senel and Senel (2021). Students viewed their results digitally.

Students were supported by a rhizomatic learning strategy as they engaged in an intrinsic process and experience of writing an online summative assessment. This finding supports Bozkurt et al. (2016) and Deleuze (1994) who stated that the rhizomatic learning approach involves students' engagement as an intrinsic process and experience using ICT networks. The students used ICT networks to access question papers, answer the questions and upload the answer books which means learning was self-managed. They wrote online summative assessments driven by self-determination, inner motivation, self-encouragement, and willingness because they were at home without invigilators or lecturers monitoring them showing that connectivism theory (Siemens, 2017) applies to the ODL context. Unisa students' attitudes were generally positive despite having to make a quick shift from onsite to online summative assessment. The attitude of students from Unisa differed from Daniel's (2020) findings that uncertainties about the transition in a Saudi university caused students protests on Twitter. Almossa (2021) mentioned that online assessment created a crisis.

## **The Preparedness for Online Summative Assessment**

The findings revealed that some students were unprepared for online summative assessment because, unlike the lecturers and the markers, they were not trained. Even though they had written online

formative assessments, findings revealed that they were faced with some challenges in the summative assessment which included difficulties in accessing myUnisa, downloading the question paper, and a lack of connectivity. They relied on lecturers' collaboration with them during the online summative assessments (Silveira, 2016). The lecturers were available to assist students, for example, by providing them with links/URLs to access the question papers if they could not access them on the online site. However, some students still could not succeed even when using URLs. Another challenge was to upload the answer books which was caused by the high volume of submissions as students had to submit at a given time and this caused students to panic. Some students did not understand the instructions about how to submit as they were not trained. Other students could not submit within the specified time and so the system closed them out. Such students were allowed to rewrite the online summative assessment in January 2021; however, not all did this as they were still questioning why the system closed them out. The researcher is of the opinion that if students had been prepared for the online summative assessment, they might have overcome some challenges like failing to use the online summative assessment site.

Plagiarism was another challenge that was revealed by the findings. Students plagiarised because they were not prepared; however, integrity is still required even though they were not monitored. This aligns with Almossa (2021), Khan and Jawaid (2020), and Klein et al. (2021) who mentioned that universities were faced with challenges when administering online summative assessments. The finding contradicts those of Koneru (2017) and Sharadgah and Sa'di (2020) who indicated that in the ODL setting, proctored online summative assessments could be administered to prevent plagiarism. That students committed plagiarism suggests that the assessment was not proctored at Unisa. Before Covid-19, the B.Ed. students in the EE module wrote venue-based summative assessments that were invigilated.

## CONCLUSION AND RECOMMENDATIONS

This study explored the online summative assessment of the B.Ed. students for the EE module in the ODL context as a response to Covid-19. It answered two research questions.

- RQ1: How did Covid-19 affect the summative assessments of the B.Ed. students for the Environmental Education module at Unisa?
- RQ2: How prepared were the students for online summative assessments during Covid-19 at Unisa?

This study concludes that prior to the outbreak of Covid-19, the university had policies and LMS tools that should have enabled the implementation of online summative assessment. Previously, lecturers administered onsite summative assessments in a venue-based context for the B.Ed. students in EE. The university was comfortable with using a blended approach before Covid-19. The second conclusion is that the outbreak of Covid-19 impelled Unisa to implement its policies on online summative assessment. The university had to make a quick shift from onsite summative assessment to online summative assessment after the outbreak of the pandemic and therefore implemented policies that had already been in place for summative assessments. The lecturers administered the online summative assessments. The markers were trained on online marking using jRouter. The primary lecturer set up a WhatsApp group for markers. Markers collaborated through WhatsApp, assisting each other when necessary.

Despite the availability of support from the WhatsApp group, markers experienced challenges that they could not resolve. The lecturers also assisted but challenges were experienced with corrupt answer books. This problem could not be resolved. Some markers were slow because they were marking online for the first time. Some students could not download the question papers and or upload the answer books as they were not trained. This occurred despite the lecturers intervening by providing links. This study's findings showed that Unisa should have pre-tested the implementation of its online assessment policies rather than implementing them under duress due to unforeseen

hazards. Pre-testing should improve the usability of the LMS, particularly the online summative assessment tool to enhance downloading of the question papers and uploading of the answer books and to minimise challenges and queries from the students.

The study recommends that the lack of connectivity should be addressed with the relevant stakeholder, namely, the Electrical Supply Commission (ESKOM [an organization that supply power in South Africa]) because education is digital, due to the fourth industrial revolution. Markers should be trained continually to ensure that they are used to online marking and pre-empt the challenge of delays in finalising the results. The university should identify the reasons why the ICT specialists did not respond promptly to those who needed assistance and solve the problem. Students should be trained beforehand to allay their fears about writing online summative assessments. Students who could not manage to write an online summative assessment after being given a second chance should be identified and afforded an opportunity to discuss their challenges and be assisted to complete an online summative assessment.

## **LIMITATIONS AND FURTHER RESEARCH**

While this study has highlighted the consequences of delayed policy implementation and the lack of preparedness for online summative assessment in an African ODL environment, some questions remain unaddressed and need further research. The limitations are that the lecturers, the students, and the markers' experiences were not explored. A future investigation of the experiences of the lecturers, markers, and management in the Unisa College of Education when administering online summative assessments is needed. Further research is needed to determine the opinions of students about their experiences of writing online summative assessments.

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## **CONFLICTS OF INTEREST**

The author of this publication declares that there is no conflict of interest.

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## ENDNOTE

- <sup>1</sup> In this study, examination equates to summative assessment and therefore the words are used interchangeably.