

# EXAMINING STUDENT TEACHERS' OPPORTUNITIES AND BARRIERS ASSOCIATED WITH FORMATIVE ONLINE ASSESSMENTS AT A UNIVERSITY OF TECHNOLOGY

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## Abstract

During the COVID-19 pandemic, many sectors were affected including education. As a result of this pandemic, university lecturers had to change their pedagogic practices, teaching and learning approaches, and assessment strategies. Due to the suspension of face-to-face activities, the use of Information Communications Technology (ICT) was accelerated, and most universities were forced to adopt online assessment strategies. The Central University of Technology (CUT) like many universities around the world used online assessments to assess its students during this period. This study examined opportunities and barriers to using formative online assessments. Twenty (20), first and second-year Bachelor of Education student teachers were purposively selected to participate in this study. The student teachers were interviewed after participating in their respective online test that was part of their formative assessment. Telephonic interviews were conducted to collect data. The interviews were then analysed to determine the possible opportunities and challenges that student teachers experience during the formative online assessments. The findings revealed by integrating technology for teaching, learning, and assessment can enhance student teachers' ICT skills. Student teachers also believed that the approach helped them to be actively involved in their learning and enhance their participation in their learning. Several challenges and barriers were recognized as well. Student teachers described how ICT competencies and inadequate ICT infrastructures, in our country, such as poor internet connectivity and lack of ICT equipment, limited their ability to fluidly engage in formative online assessments. The study provides suggestions for future research that can contribute to understanding online assessments and proposes better approaches to online assessments at the CUT.

**Keywords:** *Covid-19, information communications technology (ICT), online assessment, formative assessment.*

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## 1. Introduction

During the COVID-19 period universities had to adapt their pedagogic practices, teaching, and learning approaches, and notably their assessment strategies. The suspension of face-to-face activities forced lecturers to use Information Communications Technology (ICT) for teaching, learning, and assessment. Assessment in any form is at the heart of every formal higher education institution. It is the core component of effective teaching and learning. Within the teaching, process assessment provides ongoing support for scaffolding learning and assists learners to develop self-regulated learning dispositions. It provides students with an opportunity to demonstrate their developing abilities and obtain support to improve learning (Gikandi, Morrow & Davis, 2011). Assessment is referred to as the measurement of the learners' achievement and progress in the learning process. It is used to explain the operations associated with measuring the achievements of persons in relation to expected outcomes.

Assessment can either be formative or summative (Baleni, 2015). Formative assessment refers to an assessment that supports the process of learning. It is in many cases applied in the learning environment to provide ongoing feedback to improve teaching and learning. It focuses mainly to support learning and its activities are embedded within teachings to monitor learning and assess learners' understanding (Baleni, 2015). Feedback provided through formative assessment is not only based on monitoring progress towards the desired learning outcomes but also enables students to develop effective learning strategies. So, formative assessment is an assessment of a student's progress throughout a learning unit or subject, or course in which feedback from learning activities is used to improve student attainment. This has made one believe that assessing students' learning and progress is critical to effective teaching and learning. Ibrahim, Yusof, and Rahim (2021: 92) suggest that it was revolutionary in the sense that formative assessment

reinvented the purpose of assessment beyond simply being interchangeably regarded as an examination (Ibrahim et al., 2021). Similarly, Biggs (1998: 104) has held the view that the effectiveness of formative assessment is dependent on whether learners perceive the gap between where they are now and where they should be, and if so, what they are willing to do to close it (Biggs, 1998).

Summative assessment, on the other hand, relates to validation and accreditation (Gikandi et al., 2011). Its role is to measure what students have learned at the end of a learning unit, learning programme, or after a unit standard. It ascertains that the desired aims or goals of learning have been met (Baleni, 2015). Summative assessments are usually applied at the end of a period of instruction to measure the outcome of student learning. According to Gikandi et al. (2011: 2336), this type of assessment has been linked to unfavorable learning strategies that may promote surface learning and low order thinking because, in most instances, it evaluates declarative knowledge and basic application without any indication of individual reflection or in-depth understanding.

During the Covid -19 period most higher education institutions were forced, by circumstances, to provide tuition through distance learning. Distance education is any type of education that doesn't require the teacher and students to be present at the same location and time and instead disperses teaching and learning activities over time and space. Recently, for this to happen, most higher education institutions (HEI) were required to use the Internet and / web-based information and communications technologies (ICT). So, HEI had to embark on online learning. Online learning is a type of remote education that supports teaching and learning primarily via the use of ICT. It includes 80% or more of learning and teaching activities carried out by ICT and does not require the teacher and the student to be present at the same time and location (Gikandi et al., 2011).

Most research than has been done, has been done on e-learning, blended teaching, and learning, online teaching, and the application of technology in teaching and learning. However little research analysis has been done on electronic assessment or e-assessment as a term used in this study. The terms e-assessment and online assessment are in most cases used interchangeably (Baleni, 2015). These terms refer to assessment that is enabled and primarily conducted through web-based ICT. They use the Internet to bridge the distance between assessment and the students and does not require the teacher and the learner to be available at the same place and time.

The combination of formative assessment and ICT results into a concept that is in most cases named as formative e-assessment or online formative assessment. These terms refer to the use of ICT to support the interactive process of gathering and analysing information about student learning by teachers and learners (Gikandi et al., 2011). It is the application of formative assessment within online teaching and learning wherein teachers and learners are separated by time and/ or space and where a substantial proportion of learning or teaching activities are conducted through web-based ICT (Baleni, 2015; Gikandi et al., 2011).

### 1.1. Conceptual framework

This article is framed around Kirkpatrick's 2003 Evaluation Model to examine the diffusion, adoption, and appropriation of emerging technologies in South African higher education institutions (HEI). It is a widely renowned tool for assessing and analysing the outcomes of educational, training, and learning initiatives (Bates, 2004). There are four different judgment levels in it: reaction, learning, behavior, and results (Bates, 2004). The effectiveness of a training program is more precisely measured at each level of the model the model and this model is diagrammatically represented as follows:

Figure 1. Kirkpatrick's 2003 Evaluation Model.



When using this model, the researcher ought to use data from each level serves as a foundation for reviewing data from the next level. While each successive level represents a more reliable measure, it also necessitates a more thorough and time-consuming analysis. Additionally, Bates (2004: 341) argues that the models used to inform evaluations are inextricably linked to the usefulness and effectiveness of those evaluations... inevitably, the models and the ways in which they are used also have ethical implications, so it is crucial to continuously reflect on and analyse our models from a variety of angles. The popularity of this four-level model is also because of its function and of its potential for simplifying the complex process of training evaluation (Bates, 2004).

## 2. Methodology

For this research paper, a qualitative methodology was chosen because it uses words rather than numerical data (quantitative methods) and flows predominantly from concreteness to abstractness (Joubish, Khurram, Ahmed, Fatima & Haider, 2011). Telephonic individual interviews were conducted to collect data. The individual interviews were used because of their suitability for collecting the qualitative type of data required. Interviews were chosen because they characterise the interpretive paradigm. Interviews are critical within the interpretive paradigm because interpretive research is in most cases idiographic. Idiographic means “describing aspects of the social world by offering a detailed account of specific social settings, processes or relationships” (King & Horrocks, 2011: 11). So, interviews were chosen in this study to understand social settings, processes, or relationships that student teachers find themselves in.

Second, everyday conversations are mostly face-to-face, and this makes researchers feel at ease when using this technique (King & Horrocks, 2011). The researcher felt at ease in using this technique and it also assisted the researcher to build a rapport with the interviewees. Third, interviews were chosen for this study because qualitative research interviews are flexible, they emphasise open-ended, non-leading questions, and they focus on personal experience (Cohan, Manion & Morrison, 2018; King & Horrocks, 2011; Marvasti & Fricie, 2017).

Last, interviews were preferred in this study because they focus on people's detailed experiences. They encourage a relationship between the interviewer and the interviewee, and a high level of confidentiality and anonymity, especially in this qualitative research. Below are the types of interviews used in this study.

Twenty (20), first and second-year Bachelor of Education student teachers from the Central University of Technology in South Africa were purposively selected to participate in this study. The student teachers were after participating in an online test that was part of their formative assessment for the semester. The researcher selected these students because some of them wrote an email to the lecturers to indicate that they experienced some challenges while they were busy with the online tests. Some were chosen because they performed well in their online tests and were interviewed to determine their experiences.

## 3. Results

The first group of questions revolved around the student teachers' biographical information. The researched wanted to find information about the locations of student teachers when they were engaged in these online assessments. The findings on this theme were that most of the student teachers were from rural and semi-rural areas of the country. Because of these locations student teachers indicated that connectivity was posing a challenge to them because of this some were unable to finish their online tests. For example, these were the responses that were given by students:

Student 4 *“Every time when I have an online class or test, I have to go to my grandmother's house on the other side of the township because there the connectivity is better”.*

Student 9 *“Many are times when I'm busy, my laptop would freeze because of connectivity challenges”.*

Student 13 *“During load shedding, I'm unable to connect to the Internet due to lack of electricity”.*

The next group of questions were about the effectiveness or ineffectiveness of online formative assessments. Student teachers indicated that online formative assessments encourage peer and lecturer dialogue around learning; it also encourages positive motivational beliefs and self-esteem among students and the provide students with the required feedback to shape their learning.

Student 7 “*I can easily discuss content before and after the test with my fellow students*”.

Student 19 “*We are able to help one another, and this makes our learning easy*”.

However, it was also discovered that there is a high risk of dishonesty during these online tests and some students are dishonest when are subjected to these. Students indicated that the risk with online assessments are that:

Student 3 “*Some students quickly share answers among themselves, and it becomes unfair to us*”.

Student 8 “*Other senior students write tests for other students, and this they do for a fee*”.

Student 1 “*Other students cheat during online tests and we request that there be so sort of invigilation*”.

The finding of this paper indicated both opportunities and barriers of online formative assessments. Most student teachers felt that in as much as they enjoy these kinds of assessments the sometimes experiences challenges that in most cases not of their making. Connectivity and electricity challenges in our country poses a huge challenge for these kinds of assessments.

#### 4. Conclusions

This study has revealed several things both positive and negative about online formative assessments. Formative online assessment has the potential to offer structure for sustained meaningful interaction among students and lecturers and among students and their peers (Gikandi et al., 2011). It can also be the starting block to foster development of effective learning communities among students which will intern provide a systematic structure for effective learning support and the provision of adequate formative feedback. Among other things the time allocated for online formative assessments can be controlled i.e., live availability (Baleni, 2015; Gikandi et al., 2011). Using these kinds of assessments can contribute towards students’ deep understanding of concepts, it can encourage individuals’ reflections, peer feedback and lecturers’ feedback.

Some of the of the challenges that student teachers encountered during the COVID-19 period about the online formative are among others. The lack of stable WIFI connectivity at their respective homes or at university campuses, lack of sufficient bandwidth at the locations that the student teachers found themselves and the protection of the academic integrity of online formative assessments due to unethical behaviour.

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