



Lecturers' Experiences with Digital Assessments

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Abstract. In preparing for the Fourth Industrial Revolution (4IR), higher education institutions are concerned that new graduates are inadequately prepared for their place of work. The disparity can result in unemployment and a short supply of skilled labour. Higher education institutions, as the producers of skilled labour have a responsibility to accelerate the alignment of examinations focused on developing 21st-century skills capabilities in students. The main intention of an examination in pedagogy is to offer data and revise intended instructions. The research is aimed at understanding the difficulties of digital assessments to deal with the 21st-century disparity in skills. Due to an epistemological conviction around a social constructivist interpretive background, a case study approach is used to construct the reality influenced by the lecturers' experiences. Based on purposeful sampling, ten (10) business studies lecturers with over five (5) years of teaching experience, and familiarity with the traditional teaching methods were selected from Elangeni TVET College. Data were collected in the study using semi-structured interviews. Data was reduced into codes and themes to identify patterns of regularities to arrive at a conclusion and findings. The purpose of the study was to establish if there are any difficulties experienced by lecturers in digital assessments to produce the competencies of the 21st century. The research suggested a change in the mode of assessment based on the skills requirements of the workplace and in line with the requirements of 4IR.

Keywords: Online assessment · Higher Education · fourth industrial revolution

1 Introduction

Assessment is the core of teaching and learning, as it enables lecturers to observe evidence of learning which determines whether students' progress or do not progress, and demonstrate an understanding of the curriculum. It is argued that the higher education (HE) sector has increased interest in digital assessment and feedback, at a time when there is a growing call for teaching and learning to be digitized as a result of the outbreak of the Covid-19 pandemic, and the globalization of higher education [2]. When the Covid-19 pandemic hit the world in early 2020, digital assessments suddenly came into the spotlight as higher education institutions were expected to provide lecturers and students with the possibility to continue assessing and advancing their teaching

and learning even under new and difficult circumstances. Assessment is the core of the teaching and learning experience.

The way examinations are conducted will shape the student's perception of the curriculum and will determine their adeptness to progress. Furthermore, how students are assessed and feedback provided form an important component of lecturers' workloads and, with enlarged numbers, shrinking budgets, and an increase in learner expectations, remains to be a subject of interest for many institutions. The COVID-19 pandemic has led to the global disruption of the entire education system which necessitated an urgent response by the lecturers to work online [11]. Online formative assessments, through the Blackboard, were also performed and that reflected the nature of online learning and gave the students more responsibility for their learning. This paper looks at the lecturers' experiences with digital assessment during the digital age.

2 Literature Review

The outbreak of the COVID-19 pandemic resulted in South Africa going into lockdown causing the discontinuation of the traditional mode of assessments, with examination halls closed for venue-based examinations [5]. The total lockdown happened so fast that it left little or no time for the academic institutions to provide a transition for the academic institutions to conduct their teaching and learning remotely. The immediate change in teaching and learning from conventional classroom teaching to a new mode of students learning remotely from their homes brought challenges for lecturers and students alike [3]. Lecturers themselves struggled to come up with the best online content within the given period required. The academic calendar demanded that lecturers adapt to the new methods of conducting lessons and assessments. This looks at the experiences of lecturers during this transition period into the digital mode of teaching and learning.

Online learning has brought different challenges to the institutions of higher learning in South Africa as most students from poor backgrounds lacked access to the internet due to poor network coverage [4]. Conducting digital assessments has been difficult both for lecturers and students and has negatively affected the quality and integrity of assessments. Lecturers experienced higher queries as students had challenges completing their digital assessments due to questions taking longer to load, electricity disruptions, and poor network connectivity [5]. We also witnessed a growing demand for technical and methodological support for both lecturers and students due to lack of support which emanated in poor performance in an online examination. Lecturers are forced to dedicate more time to supporting learners in understanding the required competencies, which can improve their grades. Learners require above-average connectivity with their lecturers while experiencing poor digital platform connectivity [7].

It is believed that learners do not pay much attention to the feedback but rather focus on the grades they receive on their assessment making the effort made by lecturers to provide feedback fruitless [7]. However, Lecturers prefer learners to engage and read feedback more than just look at the results they get from their assessments. This calls for a more engaging assessment interface where students are first exposed to feedback before accessing the final mark. This will ensure that there is a guaranteed engagement between lecturers and their learners.

Lecturers encountered cases of common answers during their marking of the assessments which raises a concern that students are either writing as a group in a particular place or sharing answers through cell phones. This calls for academic institutions to come up with strategies to mitigate the possibility of cheating during online assessments. This implies that any form of cheating during the assessment invalidates or compromises the quality of that assessment and that of the people that qualify through such an assessment [5]. Lecturers are more concerned with the integrity of the assessments as that has a direct bearing on the quality of graduates that are produced through such assessments. There is also a concern for lecturers losing control of the assessment process as the students are writing their assessments in areas that lecturers do not have control over. Below is a summary of the theoretical framework related to online assessments including the variables that underpin the online assessment theory.

3 Theoretical Framework

Considering that the research paper aims to investigate lecturers' experiences with digital assessments, it is imperative to analyze their experiences in light of lecturers' experiences in administering digital assessments during the COVID-19 pandemic by higher institutions. This section looks at different theoretical frameworks applicable to digital assessment.

3.1 Network Learning Theory

Network learning theory is one of the theories underpinning this research study for the reason that during their dealings with technology children can gain knowledge independently and take charge of their learning process [8]. Network learning theory necessitates students to take charge of their learning. Understanding the network learning theory provides additional tools for lecturers to provide an environment for teaching and learning that can prepare students for greater success. Network learning theory encourages students to work in groups and be able to collaborate with one another. This allows for students' different points of view and perspectives which leads to collective decision-making and problem-solving. It encourages students to work as groups using social media, online networks, blogs, or information databases.

3.2 Technology Acceptance Theory

Technology Acceptance theory is another theory used to discover lecturers' experiences of the rise of the method of digital learning grounded on the belief that by assessing the observed effectiveness and anticipated ease to use technology after using it for several months then can the model predict behavioural intention and actual usage [9].

One can define ease of use to be the degree to which a possible information technology (IT) user thinks or understands that the use of an IT system will be free of effort, while possible effectiveness is defined as the degree to which a potential IT user thinks that the use of that IT system will improve that user's job performance. The technology acceptance model makes us understand why people accept or reject information systems.

Technology acceptance theory is perceived to be the sound theoretical framework and a dependable predictor of information technology (IT) adoption. Technology acceptance theory demonstrates technology usage and acceptance.

Technology acceptance can bring benefits at an organizational and individual level, such as organizational performance improvements, improved financial performance, and efficiency and convenience [6]. Technology acceptance can be looked at as a process starting with system design triggering cognitive responses which in turn change an attitude towards using technology and consequently influencing the behaviour. It follows that when a method is expected to be user-friendly, it is also expected that helpful and consequently lead to technology acceptance.

4 Research Methodology

A mixed-method research method was selected as the most appropriate research design for the study. The participants were lecturers who implemented digital education during the period of the COVID-19 pandemic and the lockdown initiated on 26 March 2020. Respondents were selected using the purposeful sampling method based on their knowledge and expertise of digital teaching and learning and have conducted digital assessments. The first ten questions in the study were addressed through the quantitative questionnaire, while the final three questions were addressed using a qualitative method using semi-structured interviews.

A major part of the research used predetermined open-ended questionnaires and interviews where respondents were not restricted to close-ended questions, while the balance of the study embarked on closed-ended questions to collect the information from the respondents. Qualitative methods were designed to evaluate the effectiveness of the digital assessment processes while the quantitative method was used to measure the outcomes of the digital assessment. The research used the survey to find out the complete tendencies, followed by interviews to understand better the details behind the tendencies. The reason for using both the quantitative and the qualitative methods is to benefit from the merits of both forms of research methods and offer a better view by blending results from two different outlooks rather than using either approach alone [1]. Integrative data analysis strategies for a mixed method research design can be divided into four categories originating from and demonstrated by experiential and illustrated by an empirical system such as the transformation of data, typology development, extreme case analysis, and data consolidation and merging.

The researcher was able to identify new themes and conduct a detailed analysis which served to point out deeper insights and understanding of the subject using data consolidation and merging. In this study, qualitative data were coded and incorporated, using quantitative data, into an advanced analysis confirming the lecturer's experiences with digital assessment. Data transformation was able to show the relationship between qualitative information and quantitative information. Below is a summary of the results showing the results of the study and discussion.

5 Findings and Discussions

The main conclusion was that all the participants affirmed having found merit in losing some of their roles in the process of assessments to the learners. When lecturers hold on to their power in the assessment process, the students would not be able to have a meaningful role in the assessment. It was established that the fact that lecturers are so used to the conventional methods of assessments and their role of invigilation during the assessments is what gave them the feeling of being in charge of the process. The feeling of not being physically in the place (examination hall) where students are writing their examinations made the lecturers feel like they are not responsible for the assessment process. This was a great psychological area that lecturers had to come to accept for the digital assessment to find value in the system. Students as well have historically been used to having an invigilator in the room such that when they are called to do assessments in the comfort of their home would feel that the examination process and the results thereof are less valuable.

The first question required the respondents to confirm their gender and the representation of a sample of twenty (20) percent males and eighty (80) percent females is reflected in Fig. 1.

The second question required the respondents to confirm their lecturing experience. According to questionnaire findings reflected in Fig. 2, all the respondents have more than 5 years of experience. The aim of the question was to gain insight into lecturers' experience with digital assessment from knowledgeable and experienced lecturers.

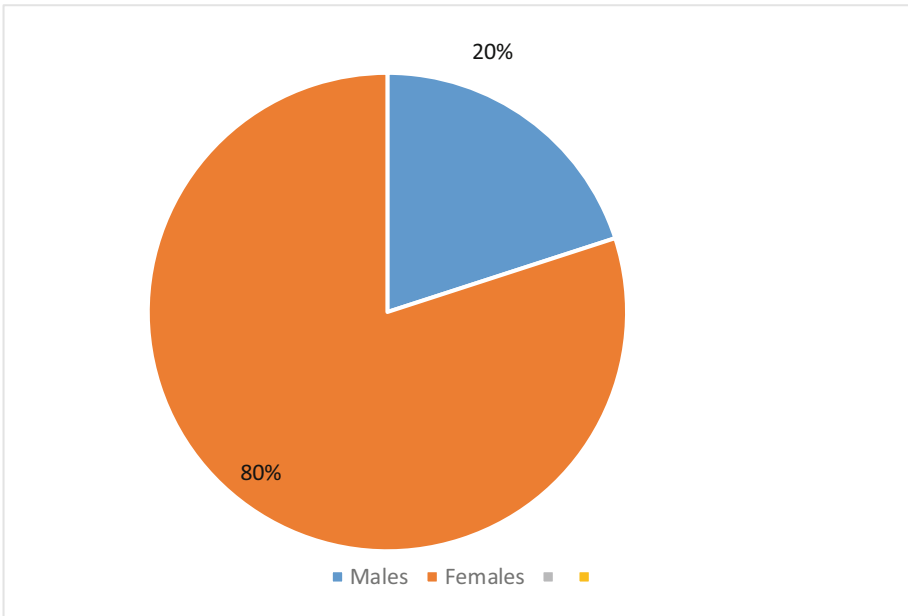


Fig. 1. Respondent's Gender

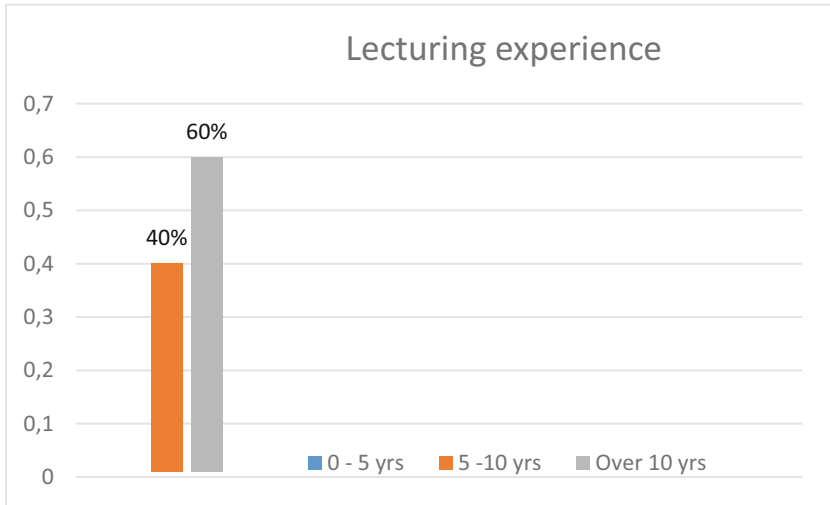


Fig. 2. Lecturer's Experiences in years

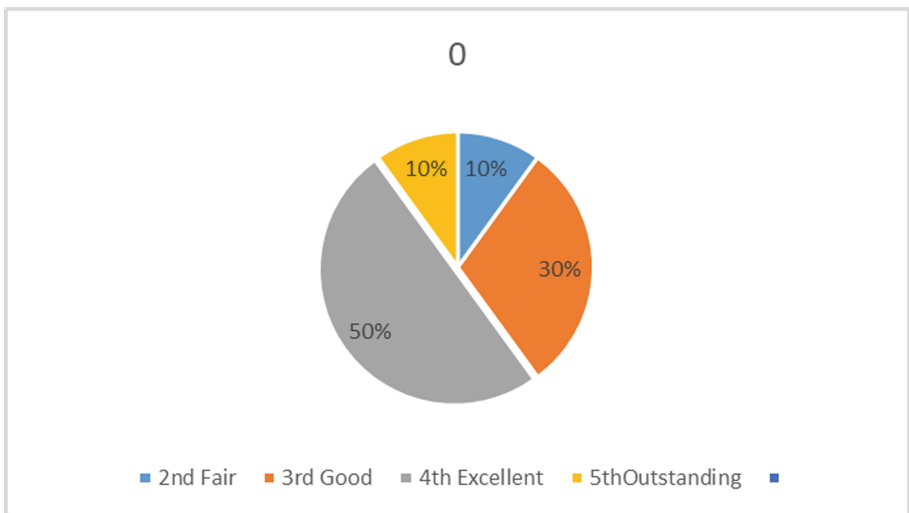


Fig. 3. Perception of the digital assessment to test knowledge

The third question required respondents to rate the effectiveness of digital assessment in testing the knowledge level of students on a scale of 1–5, with one being less effective and 5 being outstanding. Most of the participants rated the digital assessment as being either very good or good in its ability to test the knowledge level of the students. Figure 3 reflects how the respondents rated their perception of the effectiveness of the digital assessment to test the knowledge level of students.

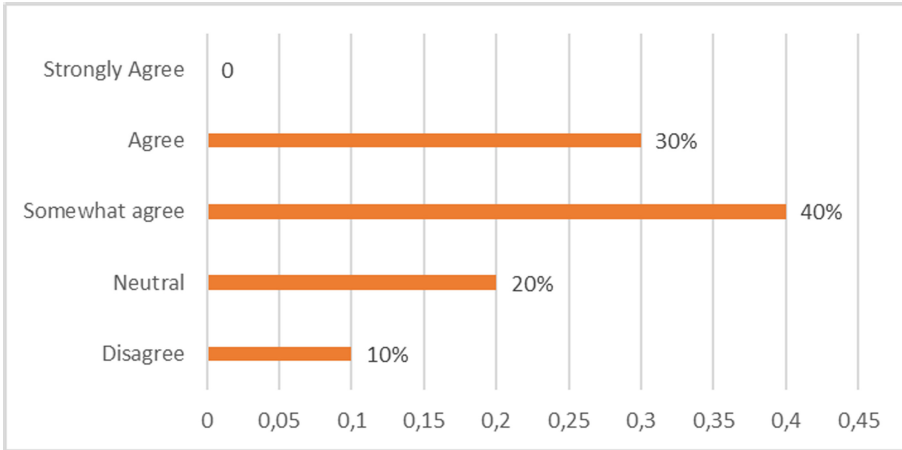


Fig. 4. Perception of control of assessment process by lecturers

The fourth question required lecturers to rate their perceptions of the ability of the digital assessment to take away their control in the assessment process. (Fig. 4) is an indication of how lecturers feel about the ability of the digital assessment to take away control from the lecturers. The results show that most lecturers feel that digital assessment is taking assessment control away from them.

The fifth question required participants to comment on the ability of the digital assessment to allow students to seek clarity and lecturers to provide clarity during the online assessment. All the research participants also agreed that the digital assessment can provide students an opportunity to seek clarity, be provided with feedback timeously, and be able to make corrections through more than one attempt during the assessment.

The sixth question required the research participants to comment on the suitability of the digital assessment for all types of assessments. The study's findings also reveal that the digital assessment is suitable for all forms of assessments including multiple choice, short questions, and discussion questions.

The seventh question solicited the views of the participants whether they have observed improved technical skills as a result of the digital assessment. It has been confirmed by all participants that the digital assessment has improved the technical skills of students. One respondent further elaborated that the digital assessment is convenient as students assess the comfort of their home and environmentally friendly as marking takes place online and further reduces the turnaround time to release results as results are mostly released immediately.

Question number seven implored respondents to identify challenges encountered during the digital assessment. All the respondents identified the problems of load-shedding in South Africa, poor network coverage, high data prices by the network service providers, lack of control in the examination process by lecturers, and the lack of digital devices were identified as limiting factors in the implementation of digital assessment. Research participants also pointed out to the possibility of students cheating during the examination as students can share answers through telephone, conduct assessments in one area so

they can discuss and compare answers, and also have a possibility of false identification as someone can write the examination for another person. Even with digital invigilation, it becomes impossible for the lecturer to confirm that the person taking the examination is actually the person they claim to be.

The last question wanted the research participants to make recommendations to make the digital assessment more effective. As a result of the aforementioned problems, the participants recommended that students download the assessment and do the assessment offline, enhance the digital invigilation to curb cheating during the examination, improve internet connectivity in all areas including rural areas, data-free connectivity, provision devices to both lecturers and students, and more importantly the capacity building workshops on how lecturers and students can effectively use technology.

6 Conclusion

A mixed methods approach was used in this research to provide both breadth and depth in understanding the lecturer's experiences with digital assessments. This research provided an outline of the research design, methodology, and methods employed as part of this research. Following that, the research design that was chosen, the data collection method, and the data analysis procedures were elaborated. The choice of research design as deliberated in the study provides the core of this research, leading up to the research problem and the selection of the methods used to address these.

The research revealed that the digital assessment put lecturers under the pressure of redesigning assessment practice as students were now anticipated to shape and retain their learning systems using human and non-human platforms for access, and then process, apply, and create information using digital technologies. Digital assessment has changed from conventional assessment practices to digital assessments that support 21st-century competencies like digital literacy, self-regulated education, and analytical thinking. The research also revealed that lecturers acknowledged the need for the use of digital assessment considering the challenges of COVID-19.

As much as there is a feeling that lecturers want to exercise control over the assessment process through venue-based invigilation, they also felt comfortable giving away that control over the assessment process. The fact that students get an opportunity to seek clarity from their lecturers makes lecturers embrace the process as it still gives them some authority. In general, the research participants are confident that the digital assessment is suitable for all forms of assessment such as short questions, and discussion questions, and can provide a fair assessment of students' knowledge levels which can justify progression.

The overall experience of lecturers reflects that lecturers are happy to work in the comfort of their homes as they get to save on fuel, transport fares, and time. Lecturers feel that digital assessment is flexible as students' log in from the comfort of their homes and have no pressure of traveling to exam venues during peak times and arriving late for the examination. One respondent highlighted the fact that when the digital assessment is used effectively it can save on administrative processes as lecturers use auto-grading to mark the assessments. This also saves time in giving feedback to the students as marking and grading can be automated and able to give feedback immediately. One

lecturer even suggested that the digital assessment encourages students to work harder on their technical skills which is an element of a hidden curriculum.

COVID-19 took the whole world by surprise and forced educational institutions to make drastic changes to maintain the business of teaching and learning. Most participants felt that the COVID-19 pandemic exposed disparities in the education system because it created disruptions in the education system and lasted longer than anticipated. They also believe that physical invigilation is necessary to maintain and show the integrity of the assessment. There is also a strong feeling that when students do not see the lecturer in front of them, they regard that as a non-learning time and rather focus on their leisure rather than studying.

7 Recommendations

The recommendation is that students download the assessment and do it offline to curb the possibility of losing their work during electrical disruption and save on data. Another recommendation is for institutions of higher learning to use digital invigilation more effectively as it is believed to have a possibility to curb cheating during examinations. All stakeholders such as the government, institutions of higher learning, and telecommunications companies need to work tirelessly to improve internet connectivity in all areas including rural areas, and provide data-free connectivity. If digital learning is to be used effectively, the Department of Higher Education needs to accelerate the provision of devices to both lecturers and students, and more importantly the capacity-building workshops on the use of technology for both lecturers and students.

It is the responsibility of government, academic institutions, and the private sector to work together to guarantee the provision of professional interactive resources and the best quality, effective academic networking experiences and encourage technology-supported learning for students to narrow the gaps that existed in the system of education before and after the COVID-19 pandemic, which is needed for learning that is free from any kind of disruption. Ongoing programmes in mutually significant partnerships with the private sector will guarantee that the increase in 21st-century skills remains significant to the needs of the skills requirements. There is also a need for an evaluation of the quality of the graduates that have graduated during the period of the digital assessment.

The observation that the pass rate has increased dramatically during the period of the digital assessment calls on the dialogue with the employers to monitor the quality of graduates that the higher institutions are compatible with the requirements of the employers. This evaluation is important if the digital assessment is to be adopted as a permanent mode of offering and should the results show that the graduates lack preparation the institutions of higher learning will be called upon to re-evaluate their strategies before great damage is experienced in the workplace.

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