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Use of Technology to Morph Teaching and Learning in Higher Education: Post COVID-19 Era

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Abstract

Background: Since COVID-19 was declared a pandemic, many educational institutions in the world, swiftly adopted online teaching mode as a mean of teaching and learning to curtail the spread of the disease. Today, the number of cases and deaths has decreased significantly, and life slowly comes to normal. Despite the significant reduction of cases and deaths, some higher education institutions decided to continue with online teaching while some choose blended learning mode. The reasons being to prevent the spread against COVID-19 infections and other future pandemic, save time and improve teaching. Other institutions are not yet deciding the way forward. Is to investigate and suggest the right path to follow in higher education institutions in Africa/Namibia context in this digital era without denying access to education or compromising key learning domain. **Method:** Contextual reflection was applied to address the use of technology to morph learning and teaching in African/Namibia context. **Results:** The use of different online platforms, reflexive discussion, criticality, and praxis were identified as keys to morph teaching and learning in higher education. **Conclusion:** The right path on the use of technology after COVID-19 era is needed to effectively address the inclusivity and massification in higher learning institution despite the internet challenges the continent is facing.

Keywords

Morph, Digital Era, Reflexivity, Praxis, Criticality, Online Teaching and Learning

1. Introduction

Due to Coronavirus diseases of 2019 (COVID-19) which was declared pandemic

in March 2020, most of educational institutions globally swiftly adopted online teaching mode to ensure quality teaching & learning while curtailing spread of COVID-19 (Gandhi et al., 2020). Remote courses and other online learning activities became the new norm (UNESCO, 2020). Higher learning institution in Africa also follows the same trend (Mpungose, 2020). However, this adaptation of online learning in Africa has been affected with low internet penetration rate (World Bank, 2021). In Namibia, where this study was conducted, internet penetration rate was 47% as of July 2021. This means that, thousands of learners have been left behind because of low internet access and difficulties in adopting the new norms (Mahyoob, 2020). As academics we have experienced and witnessed both lecturers and students complain of online learning & teaching platforms. Some of complains include disappearance of examination papers which were to be written online or at the time of writing. Other lecturers and students find, it is very difficult to concentrate in online lectures, difficult to choose proper teaching methods that can be used online, especially for the modules with practical components, difficult in changing learning styles to adopt in new online learning environment (Mahyoob, 2020). To address these challenges, three objectives were formulated as follows; use of technology to address inclusivity and massification in higher education, assess the effect of online on learning styles and teaching methods and to finally to develop a critical reflective approach on suitable strategies to enable quality teaching and learning in an online context. Henceforth, this article investigates and suggests the right path to follow in higher education institutions in Africa/Namibia context in this digital era without denying access to education or compromising key learning domains.

The article is based on the following objectives:

1) To contextualize the use of technology to morph teaching and learning in African/Namibia, the contextual reelection was used.

2) To use technology integrated teaching and learning to address inclusivity and massification in higher education.

3) To assess the effect of technology integrated on teaching and learning during the COVID-19 era.

There are different studies conducted during COVID-19 pandemic in online learning, experience, and technology related to online learning. A study conducted in Athens, Greek on the use of common E-Learning tools towards state (Degree) of scientific literacy in Greek Second Chance Schools (SCS), during the First Wave of the COVID-19 Pandemic found that, the vast majority of the scientific literacy trainers that took part in the synchronous distance learning, in Second Chance Schools, are not pleased by the distance learning of scientific literacy in comparison with the adequacy and apprehension of the curriculum that would be taught in person (Trapali et al., 2022). Another, study was conducted in Austria on Video-Based Learning (VBL) compared to face-to-face learning in psychomotor skills for physiotherapy Education, in which experimental groups received electronic access to a video and written materials, whe-

reas the control group attended a face-to-face lesson, with the same written materials were given. Both groups were instructed to learn and practice the technique for duration of one week. Afterwards, a blinded examiner tested for psychomotor skills, multiple-choice questions were assessed for cognitive knowledge. Student satisfaction was tested with a Likert-scale based questionnaire. The study established, that VBL can produce comparable exam results in teaching psychomotor skills and that circumscribed psychomotor skills can be taught using VBL. Hence, overall student acceptance of VBL as a teaching method was high. University lecturers in physiotherapy education may use VBL as a standalone method but need to be aware of giving accurate and timely feedback (Eidenberger & Nowotny, 2022).

In Kingdom of Bahrain, study was conducted on the aims to provide empirical evidence on student's online experience on the virtual education during the COVID-19 pandemic, with the following objectives, what extent the general issues, content delivery, students' interaction, assessment, and health issues effect on the students learning. In this study it was reported that students' online experience on virtual education during the COVID-19 pandemic era seems to be different from physical learning; most of them believe that learning is better in physical classrooms than through online education. More engagements from the relevant authorities by put in place more legislation and strict regulations to ensure the process and the effectiveness of virtual education (Omar, 2021).

Another study was conducted in Zambia, a study employed a qualitative approach and specifically the narrative design was largely dependent on primary data. Data were collected using face to face semi-structured interviews from 16 purposefully sampled lecturers. Narrative descriptions, matrixes and diagrams were used to present and analyze the findings. The study reported that despite its devastating effects on humanity in general and specifically on education systems globally, COVID-19 has been a blessing in disguise. For the school of education at university of Zambia, the pandemic has been a catalyst at ensuring that the institution achieves its strategic plan 2018-2020 of implementing a fully-fledged e-learning platform for all University programmes. The pandemic forced lecturers to move from their traditional forms of teaching to new innovative online methods, instructions, and pedagogies. Though lecturers' initial attitudes to online teaching were negative eventually warmed up to online teaching and have currently fully embraced it notwithstanding its challenges. In addition to that, study's findings shown that lecturers' undesirable teaching experiences emerged from a spectrum of issues ranging from managements failure to provide basic online teaching-learning tools, to students' inability to participate in the online classes properly and fully. The study concluded that, both lecturers and students at the University of Zambia, especially school of education have had to equip themselves with 21st-century teaching and learning e-education competencies. There is a need for lecturers to design content that is suitable for online teaching and learning. Content promotes student autonomy so that the transactional dis-

tance between lecturers and learners is kept minimal during the period of the COVID-19 pandemic and in the un-foreseen future (Lufungulo et al., 2021).

As some of the study findings presented above, generally online classes in most of African higher learning institutions is still a challenge, however, there are improvements in some areas of the continent.

2. Methodology

This paper is aligned with the three domains of writing, namely: criticality, reflexivity and praxis. When academics employ the three elements of in their context, online pedagogy may be enhanced (Stierer, 2008). This paper adopted a contextual reflection to address the use of technology to morph learning and teaching in African/Namibia context. Criticality, reflexivity, and praxis were employed to make meaning of how technology integration was used to transform teaching and learning in higher education after COVID-19 era using different online platforms.

3. Data Analysis

Analytical framework was applied for logical thinking in systematic manner to understand the right path. Under analytical framework, three phases were discussed, namely: criticality, reflexivity, and praxis (Stierer, 2008). Under criticality phase, lecturers, students, and other staff who support learning and teaching were deeply engaged in the reflective discussion and during reflexivity phase we look on how students and lecturers have morphed or transformed. **Figure 1** shows how students engage in a critical reflection that may enhance epistemological access in high education social context.

Last phase was praxis whereby concepts, theory and ideas were integrated into practices or effect the change which is morphogenesis.

4. Results

These results based on the criticality, reflexivity and praxis of which students, lecturers and other academic supporting staff were deeply engaged. Below are the summarized results. The use of technology to morph learning and teaching should be able to address inclusivity and massification in higher education. In Namibia, online pedagogy can be accessed using Moodle (LMS)—online teaching, forum discussions (two way), group activities, announcements (one-way traffic), assessment or Zoom, BigBlueButton, Teams and WhatsApp and sms-texts (virtual classes), Google meet and Google classrooms, b6, Khan Academics. Students will be given internet pocket device to be able to access internet wherever they are.

4.1. Criticality

Criticality is about moving beyond mere descriptions to deeply engage lecturers and students and not just summarizing ideas. Criticality is not criticising (finding

Figure 1. Show deep engagement in reflective discussion.

fault), it is about critical contextual analysis that helps to assess that text within the context of its historical and cultural setting in higher education. It provides logical academic arguments as far as use of technology in higher education is concerned instead of just describing things. To bring new INSIGHT on the issue of use of technology to morph learning and teaching (Stierer, 2008).

4.2. Reflexivity

This is one of the key concepts; it facilitates recording and analysing how students and lecturers have developed professionally (Zelick, 2013). Use of reflexive practice enables self-understanding, awareness and facilitates professional learning and communicating on how students and lecturers have transformed or morphed in learning and teaching (Stierer, 2008).

4.3. Praxis

Theory and practice are integrated to effect action and change (Transformation/ Morphogenesis) (Freire, 1972). Praxis links concepts, theories, and ideas to practice (Stierer, 2008). This demonstrates how students and lecturers have moved away from common sense. This process enables students, in their effort to acquire knowledge, to move from the periphery/edge towards the centre. Education is morphed towards the use of technology to enable effective teaching and learning.

5. Discussion

COVID-19 forced academics to adopt new ways of teaching, assessing for and of student learning. Institutions are looking at what to discard and what to keep after COVID-19 era as supported by the study done in Zambia (Lufungulo et al., 2021). The most important question that we need to ask ourselves is that, are we going to go back to the old way we have been doing things (what the lessons are

learned). It is true that technology save time, improves teaching, economy of stakeholders and address global community as well as massification as supported by other studies (Mahyoob, 2020; Mpungose, 2020). The big challenge in Africa and Namibia as well is that most of the students are coming from remote towns where the network is very limited (Omar, 2021) and nowadays because of many higher learning institutions have shifted to online teaching, internet connection is experiencing pressure due to the COVID-19 crisis as all the students, teachers, and most of the other sectors shifted to work online (Zheng et al., 2021). The findings from this study showed that there is a need to engage lecturers, students on the reflexive practice so that the issue of use of technology in learning and teaching can be address effectively and no one should be left behind (Freire, 1972). Learners and lecturers confronted some difficulties accessing online lessons, materials downloading, online exams conducting, etc., students reported these issues as the most significant issue. Some other students could not open online exams on their mobile phones because of some lack of digital literacy (among educators and learners), often we had assumed that lecturers or university learners need no training, lack of internet connectivity (poor Wi-fi reception) and gargets (Jansen & O'Ryan, 2020). The high cost of data to access internet connectivity, areas not covered by network as well as digital phobia among teachers and learners. Ghost students and absenteeism Occasional interruptions & disruptions on platforms (T/L on pyjamas, TV, …) Procrastination (Jansen & O'Ryan, 2020) (educators & learners). Where to after COVID-19? COVID-19 forced academics to adopt new ways of teaching, assessing for and of student learning. Technology save time, improves teaching, economy of stakeholders and address global community as well as massification but this should not be embraced without considering the critically, reflexivity and praxis of use of technology to morph teaching and learning.

6. Conclusion and Recommendations

To conclude, there is no doubt that technological devises have morphed the way teaching and learning is contacted in the digital era. The forced migration from traditional teaching and learning exacerbated by the coronavirus pandemic that ravaged the globe led to the transformation in teaching and learning. Technology integration was the alternate to ensure quality teaching and learning are taking place against all odds. Despite low connectivity, in Africa, strides have been made in online teaching and learning in high education context. Exposing both academics and students to integrating technology in teaching and learning early enough may help them thrive in future. Therefore, it is recommended that technology should be integrated into existing curricula to expose students by giving them the relevant technological knowledge to survive in the digital environment. It is further recommended that the academics should be oriented earlier enough to enable them to use it exclusively as a crisis-management tool. This way, the educators in high education institutions can improve the use of tech-

nology devices for effective teaching which will translate into quality learning. Finally, COVID-19 pandemic opened new avenues in Africa that have never been experienced before such as digital bereavement that has not been experienced in the African norms, value and believes. This new culture created by the urgent proliferation of e-media platforms could be exploited to create opportunities in teaching and learning in high education setting. It is recommended that more investments should be done to widen access to information communication technology (ICT), which could lessen the exclusion of the less fortunate in the era of digital divide. The right path will be to effectively address the inclusivity and massification in higher learning institution despite the internet challenges the continent is facing.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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