Student-Centred and Transformative Online Pedagogies Employed by Lecturers During the COVID-19 Pandemic at a South African Higher Education Institution

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Abstract. During an unprecedented period of disruption unleashed by the COVID-19 pandemic, lecturers were forced to embrace change and integrate digital tools into their teaching. When the pandemic broke out, some higher education institutions in South Africa were already facilitating most of their lectures online while others were not. Whilst there is abundant research from the Global North on the impact of the pandemic on teaching and learning and how lecturers facilitated online learning, more research on this topic from the Global South is needed in order to fully understand the teaching challenges and successes experienced with the transition to online teaching. The case study explored online pedagogies employed by lecturers at an Historically-Disadvantaged Institution (HDI) during the pandemic. The SAMR model of technology integration was used to interpret the findings. Content Analysis was employed to analyse the interview data collected from two purposively-selected lecturers in two faculties. The study revealed lecturers' student-centred and transformative practices as they went through the various levels of the SAMR model and used educational tools to mediate knowledge construction. The findings suggest that despite the many challenges associated with emergency remote and online teaching at the time, the pandemic provided a blue-print for the transformation of teaching and learning, ushered in blended learning and fast-tracked change in a resource-challenged university context. The findings have implications for staff and student development.

Keywords: COVID-19 pandemic · teaching and learning · online pedagogies · transformation · challenges

1 Introduction

The coronavirus pandemic has impacted every aspect of human life, including teaching and learning in higher education. The transition from face-face learning to online teaching during the pandemic has necessitated that lecturers embrace technology and transform their teaching and assessment practices in order to make it possible for students to achieve learning outcomes. According to 'university education is about complex learning' and promoting a variety of skills and qualities' [6]. Knight mentions three

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requirements that curricula must meet to ensure that these goals are met, namely, curricula must be coherent and progressive, learning and teaching strategies and assessment arrangements must align with one another, and there must be clear message about the 'rules of the game and what matters' [6].

In this paper the author discusses student-centred *and transformative* teaching practices adopted by lecturers to help students acquire 'complex learning' and enhance student learning in the online environment. Although there has been a lot of research produced in the Global North on the impact of the pandemic on teaching and learning, not much research in the Global South is available on this issue. It is therefore necessary that the innovations and adjustments to lecturers' classroom practices are also captured in the Global South in order to learn from the challenges and gains made from COVID-19 and plan for a post-pandemic teaching-learning landscape. This is particularly important because developing countries are not only resource-constrained but were also lagging behind in the use of emergent technologies for teaching and learning at the time the pandemic broke out.

Informed by the SAMR framework the study explored online teaching and assessment practices of two lecturers at a resource-constrained higher education institution in South Africa. The author argues that the pandemic presented a learning curve for lecturers at the HDI as they tried to strike a balance between helping students achieve learning outcomes, grounding their teaching in relevant learning theories and exploiting the affordances of technology to make the subject content accessible to students. However, the COVID-19 pandemic calls for reflexive practice. Lecturers need to interrogate their pedagogic and digital practices during the pandemic and question their effectiveness and relevance.

The study seeks to contribute to existing knowledge on the transformation of teaching and learning through the integration of technology during the pandemic. It sought to answer the question, how did lecturers facilitate online learning to enhance student learning during the pandemic? The purpose of the study was to understand how lecturers purposefully changed their classroom practices and incorporated technology into their teaching to respond to the emergency situation and challenges experienced at the time to promote effective student learning that fosters deep learning. It explored the lecturers' integration of technology into teaching, the use of (online) teaching-learning activities and the online feedback strategies aimed at making curriculum content accessible to students. There are four levels of thinking about learning and teaching, namely, what the student is; what the teacher does, what the student does and how the student manages what the teacher does. In level 3, teaching is seen as providing support for learning and the teacher's task is to promote active learning and design learning activities and assessments 'from which it is very difficult for the student to escape from without learning' [3]. The study explored what the lecturer did to enhance student learning in the online environment. The unit of analysis is facilitation of online learning during the pandemic.

The paper is structured as follows: the literature and the frameworks underpinning the study are discussed first. These are followed by the research design, identification of the themes emanating from the data and how the literature and the frameworks explain the findings. Lastly the conclusions, implications and recommendations are presented.

2 Literature Review

2.1 Student-Centred Teaching

Student-centred education reflects a switch from what has become the "traditional" or teacher-centred classroom format in which teachers lecture and students sit passively while taking notes and tests [4]. It encourages students to be accountable for their learning and take more responsibility for it [12]. In addition, learner-centred teachers are responsive to and respectful of the diverse needs of their students [12]. A shift towards learner-centred instruction entails providing support to all the students, adopting teaching strategies that promote active student engagement, students constructing knowledge through well-crafted and challenging teaching-learning activities or projects, synchronous and asynchronous collaboration, inquiry and problem-solving.

2.2 Online Teaching and Learning During COVID-19

The literature on COVID-19 revealed that lecturers adopted innovative pedagogical methods during the pandemic, for example, Lorico, Lapitan and Diaz employed a blended /hybrid instruction methodology involving the following five steps: Discover, Learn, Practice and Assess (DLPCA) [9]. The five steps were implemented using synchronous and asynchronous learning and students indicated a positive experience of the blended approach. In one South African university, Moodle was used a s a repository and students preferred to be taught using WhatsApp, Twitter and mobile phones and the internet [15].

However, novice and expert university lecturers faced different dilemmas and challenges with the sudden shift from face-to face to emergency remote teaching [8]. They concluded that institutions need to develop a more holistic, realistic and sensitive approach to emergency situations such as COVID-19 to enable them to respond efficiently and effectively to such emergency situations.

The transition from- face- to face online teaching necessitated that lecturers shift from traditional methods of teaching to modern digitally-based methods of teaching. However, the shift did not come without challenges. Menon and Motala argue that the shift to ERT and online learning brought issues of social justice, pedagogical inclusion and epistemic access to the fore during the pandemic [14]. Factors such as a lack of devices and data, network challenges, limited band-with, living conditions that were not conducive to studying and psycho-social factors compromised learning during the abrupt transition from face to face to Emergency Remote Teaching (ERT). In addition, lecturers who had transitioned from the flipped classroom (blended learning mode) to embrace full online teaching found that this option was no longer available to them during the pandemic [14]. Another view was that despite the challenges and limitations associated with online learning, the pandemic, had "prepared the faculty for a blended learning approach and increased their awareness of global and future challenges" [1], p.367. Moodley found that during Emergency Remote Learning (ERL), teaching and learning had adopted impersonal methodologies that were not based on an understanding of pedagogy and that ERL had alienated and disengaged students from learning collaboratively because of the transactional distance between lecturer and student [13]. Although some

universities already had an online presence, there were challenges regarding data, network connectivity and a lack of devices at the start of the pandemic, institutions crafted an online teaching strategy that involved using the internet for knowledge generation and acquisition. Teaching was done through online platforms such as WhatsApp, Blackboard and YouTube and learning materials were delivered through the postal network to far-flung and difficult to reach areas [7].

Online teaching also requires that lecturers possess certain skills to facilitate successfully. Rapanta, Botturi, Goodyear and Guardia asserted that "online teaching and learning imply a certain pedagogical content knowledge (PCK), mainly related to designing and organizing for better learning experiences and creating distinctive learning environments, with the help of digital technologies" [16, p.923]. Zheng, Bender and Lyon concluded that 'online courses during the pandemic could achieve equivalent or better student course performance than the same pre-pandemic in-person courses' [18, p.495]. Findings by Landa et al. revealed that students and lecturers were ill-prepared for using online resources during the pandemic, thus adding to the complexity of the crisis [7].

2.3 (Online) Teaching-Learning Activities and Assessment

Well-thought-out teaching-learning activities are an integral part of online facilitation which hinges on teacher presence and digital skills. Rapanta, Botturi, Goodyear, Guardia and Koole concluded that the design of teaching-learning activities (TLAs) 'with certain characteristics', the combination of three types of presence (social, cognitive and facilitatory) and adapting assessments to 'the new learning requirements,' should takes centre stage in online environments. "If teachers invest time in designing learning activities that address learners' cognitive and social needs, better learning outcomes are possible [16, p.923]." They proposed the following assessment strategies during and after the pandemic: Continuous Assessment (CASS), self-reflections/portfolios, presentations, individual work and more asynchronous collaboration to promote self-regulation and accountability, presentations and thoughtfully-designed blended learning tasks.

2.4 Digital Teaching Methods

Examples of digital teaching methods include: class blogs, game-based teaching, flipped classroom (online quizzes, polls, infographics, mind maps/word clouds), pre-recorded video classes, live online classes, and presentations (Google Slides, PowerPoint, Prezzie, Slideshare, online whiteboard (digitalclassworld.com/blog/online teaching methods and pedagogy).

3 Theoretical Framework

The study is informed by the SAMR model of technology integration which proposes four different degrees of classroom technology integration- Substitution, Augmentation, Modification and Re-definition. The first two levels represent Enhancement while the last two are associated with Transformation. SAMR should not be viewed as a progression or as a staircase (ed-class.com), but as a means of helping students achieve learning outcomes. The SAMR model was chosen because it shows the various ways in which technology is integrated into teaching to enhance student learning (Fig. 1).

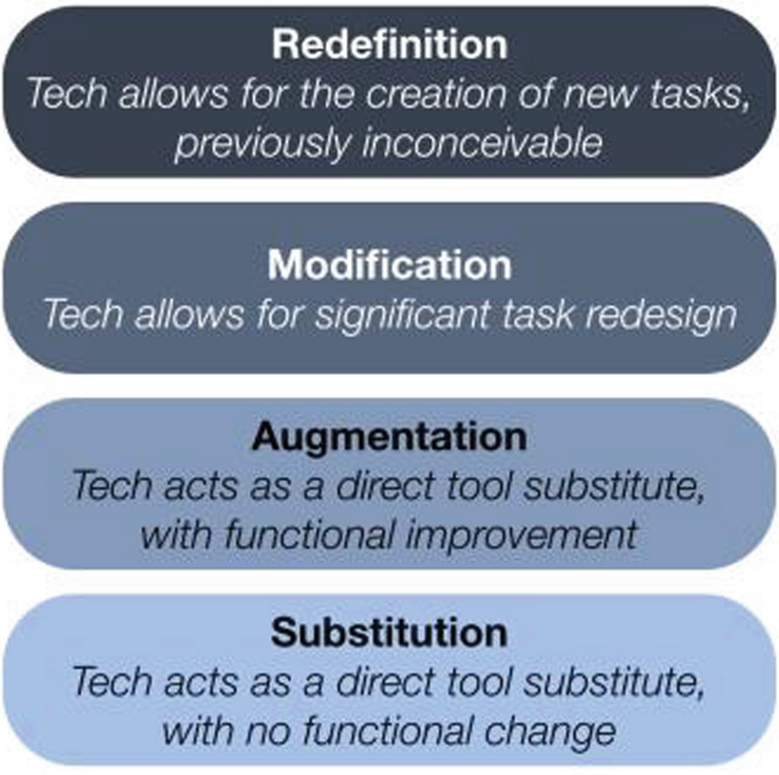

Fig. 1. SAMR Model of Technology Integration

4 Study Context

The study was undertaken in South Africa in 2022 - two years after the pandemic broke out. It was conducted at a Historically Disadvantaged Institution (HDI) in the Eastern Cape, which is one of the poorest provinces in South Africa.

4.1 Participants

Both participants who were purposively selected to participate in the case study teach in the same university. Respondent A is a time-on-task male lecturer who teaches Micro-Biology in the Health Sciences Faculty. He also offers the same subject virtually in other institutions. Respondent B is a full-time lecturer in the Science and Agriculture Faculty and has extensive university teaching experience.

5 Methodology

The case study was undertaken within an interpretive and qualitative approach. Interpretivists are opposed to the idea of objective knowledge and believe that the truth is dependent on people's interpretation of a situation (epistemological position), want to gain an in-depth understanding of human behavior since they believe that reality is a social construction (ontological position). Interpretivists tell narratives and use thick, 'rich descriptions' and quotations from participants to depict the participants' subjective experiences (meta-theoretical position) [5].

6 Data Presentation and Analysis

The study investigated lecture perspectives of the impact of COVID- 19 on teaching and learning. It sought to answer the following question: it sought to answer the question, how did lecturers at a Historically-Disadvantaged Institution facilitate online learning during the COVID-19 pandemic to enhance student learning? In this section, the findings are presented and analysed.

6.1 Facilitation of Learning During the Pandemic

The findings revealed that lecturers employed a variety of e-tools to mediate learning and help students achieve learning outcomes and the type of learning encouraged by the lecturer. Both lecturers embedded videos in their presentations and students found these stimulating and interesting. Blackboard, the designated institutional LMS was used mainly as a repository as there was a preference for Teams which was perceived to be more interactive. Students were directed to resources through links which were shared with them. Cartoons and WhatsApp were employed to stimulate discussion and music was played by Lecturer B to give students a break in between periods/sessions.

Table 1 captures the digital tools that were employed by the two lecturers, the purposes for which they were used and the kind of learning the lecturer wanted to promote.

6.2 Teaching-Learning Activities

The data revealed that lecturers did not necessarily follow a particular order when choosing which tool to use but were guided by what they wanted their students to achieve (Table 2).

Table 1. Digital tools that were employed by the two lecturers

E-Tools Employed	***Purpose for which they were used***	***Type of Learning Promoted***
Cartoons	Used to frame online discussions	Discussion, Production
Watch *videos,* review content and submit a written task	Frame online discussions, write an assignment, review content	Acquisition, Production, Discussion, Collaboration
Provide *links* for students, students search for links leading to relevant content	Locate relevant subject content to be used for presentations, discussions and assignments	Acquisition
Listening to *Webinars,* linking students to other universities so that they can listen to lectures prepared by another lecturer elsewhere	Expose students to additional subject content to promote'epistemological access.'	Collaboration, Acquisition,
Complete online tutorial activities (formative assessment)/online quizzes	To promote better understanding of content	Acquisition, Practice
Upload resources/materials online/pre-reading materials	To help students prepare for discussions	Acquisition, Practice
Online group work using TEAMS break-away groups	To facilitate group discussion	Collaboration, Discussion
Online presentations	To facilitate whole-class discussions	Collaboration, Discussion
Lecturer posts engaging questions on the LMS and names of students who will lead the discussion.	To facilitate whole-class discussion	Production, Discussion, Acquisition, Investigation,
Asking questions and posting online feedback on the chat box by students and the lecturer	Give dialogic, authentic and student-centred feedback, respond to feedback, promote student agency and capacity to give feedback, promote student engagement and make lectures interactive.	Collaboration, Discussion
Small group work/Flipped Classroom/Presentations	Engagement with the content prior to attending classes, promote deep learning, increase participation and attendance	Collaboration, Discussion, Investigation

6.3 Knowledge Creation through Synchronous and Asynchronous Collaboration

Both lecturers were of the view that students work better together. According to Lecturer B, a typical blended lesson would unfold as follows:

Table 2. Teaching-learning activities categorized according to the SAMR model dimensions.

SAMR Model Components	Teaching-Learning Activities Categorised According to SAMR Model
Substitution	Online tuts and activities, students watching videos and cartoons, uploading teaching-learning resources on Bb
Augmentation	Power-Point and oral presentations, create and embed videos in their presentations, forming break-away groups on Bb for small group work.
Modification	Students use the internet to search for materials and conduct research.
Re-definition	Lecturer connects his students with other people from different countries

Planning Phase: The lecturer, with the assistance of a student representative forms a WhatsApp group and breakaway groups on Teams; designs a learning activity for the week/2 weeks. Coded slides are uploaded on Teams and students watched videos before attending lectures virtually.

Pre-reading Phase: Pre-reading material is shared with students, or students watch a video and respond to questions on the material individually.

In-class discussion: Break-away groups/Whole-class discussion of the content of the material distributed in advance/students answer questions on the material (online).

Report-writing: Group/individual project.

6.4 Online Assessment and Feedback

Both participants used the LMS for formative online assessments (tutorials and quizzes). Assessment types used by the two lecturers include: formative assessments. Online tests, exams and Continuous Assessment (CASS). Changes were made to weightings and there was a biase towards CASS.

The major challenge with online assessments was plagiarism. Timed tests and research assignments were used to counter this problem, and assignments were subjected to the Turn-it-in plagiarism software.

6.5 Student Engagement

Lecturers used most of the e-tools mentioned earlier to promote student engagement and collaboration. They also used a variety of online activities to enhance student learning e.g. breakaway groups, games and webinars (Table 3).

Table 3. Summary of emergent themes

Emergent Themes	Selected quotation excerpts
1. Digital and pedagogic transformation	*"We were more comfortable with Microsoft Teams"* *I played videos for students during my lectures. Students find them stimulating and encouraging. I searched for relevant content, edited and embedded videos in my PowerPoint presentations. I also shared them with students." Some of the students actually found links that lead them to other resources. I also played music during the short break to give students a break from the educational content"* ***(RA)*** *"Most of our teaching materials are uploaded on our online platform because we always use the student portal."* ***(RB)*** *"The only thing that was different is that we had to use a blended approach. We coded all the slides and then uploaded them onto our platform so students could listen to the slides BEFORE coming to class" (RB)." A WhatsApp group for the class was created. I would post the names of students who will be discussing an engaging and challenging question"* ***(RB)***
2. Knowledge Creation	*"Students work better together (collaborative learning). They watch a video before coming to class, and you (lecturer) spend 15–20 min talking about the video and give them a quiz. I then link them to Teams. I then put them in breakaway groups (collaborative learning -give them questions to discuss.* ***(RB)***
3. Active learning to promote knowledge-creation and student participation	*"Well-constructed activities are useful for students to engage in enquiry-based based learning. I use them a lot to promote active learning* (RB*).* *"I give students tasks to complete- individually or in groups."*

(*continued*)

Table 3. (*continued*)

Emergent Themes	Selected quotation excerpts
4. Online assessment	*"After 10/15 min of delivering a lecture, I conduct a simple test on the chatbox. When I started with this there was a high level of improvement, in terms of engagement or participation" (**RA**).* *"I tried to avoid assignments that will require them to write much, instead, I made them watch videos, review them and then give a synopsis of the content. I also expose my students to webinars." (**RA**)* *"Bb allows students to take up tests online. I tested it first to minimize copying. I would literally open the test for two hours. They also take a research exam. I opted for one test and focused on CASS." (**RA**)*
5. Student Engagement	*" But now there are a lot of activities that we can use online to promote better learning and engagement and expose the student to other resources **(RA)*** *"I use group work and teaching -learning activities to promote student engagement" (**RB**).*

7 Discussion

The findings indicate that during the pandemic, lecturers' classroom practices shifted towards student-centred and transformative teaching. Students participated in knowledge-construction, various e-tools were employed by lecturers for teaching, assessment, promoting student engagement and blended learning, i.e. synchronous and asynchronous learning. Lecturers moved across the four levels of technology integration – from Enhancement to Transformation without following any particular order. The need to 'Save the Year' and make sure that 'No Student was Left Behind,' their awareness of the context in which they were teaching and their existing pedagogical and content knowledge guided and informed their practice.

7.1 Student-Centred and Transformative Pedagogy

The lecturers adopted a facilitative role during the pandemic and allowed students to take more responsibility and accountability for their learning, for example the flipped classroom requires students to engage in active learning, prepare in advance for class, study online and offline, work individually and in groups. Lecturers sometimes used the lecture method, experimented with various types of digital tools and questioned their

practice with a view to determining what works for their students (reflexive approach) under the prevailing circumstances.

7.2 Active Engagement and Knowledge Creation

Archambault, Leary and Rice identified five foundational components of online pedagogy namely: building relationships and community, leveraging learner agency, incorporating Active Learning, embracing Mastery Learning and personalising the learning process [2]. The five pillars are grounded in Constructivism, Situated Learning and Learner-centredness.

Teaching-learning activities and assessments that lecturers designed were aimed at promoting knowledge-creation, active engagement and various forms of learning, e.g. collaboration, investigation and discussion. Rapanta, Botturi, Goodyear, Guardia & Koole (2020, p.923) argued that the design of teaching-learning activities (TLAs) 'with certain characteristics', the combination of three types of presence (social, cognitive and facilitatory) and adapting assessments to 'the new learning requirements,' should takes centre stage in online environments. "If teachers invest time in designing learning activities that address learners' cognitive and social needs, better learning outcomes are possible." Activities were completed individually or in groups, synchronously or asynchronously to promote active learning. Global feedback was shared in WhatsApp groups.

7.3 Transformative Practices in Assessment

Participants shifted from high-stakes summative assessments to continuous assessment. This an indicative of a move towards *Assessment for* learning and *Assessment as* learning. Continuous Assessment is developmental in nature, focuses on promoting learning and understanding of subject content and not marks (achievement). Rapanta, Botturi, Goodyear, Guardia & Koole argued that the design of teaching-learning activities (TLAs) 'with certain characteristics', the combination of three types of presence (social, cognitive and facilitatory) and adapting assessments to 'the new learning requirements,' should takes centre stage in online environments [16]. "If teachers invest time in designing learning activities that address learners' cognitive and social needs, better learning outcomes are possible" [16, p.923].

The online tutorials which were completed individually by students and were aimed at reinforcing understanding of content as well as consolidating what had been discussed and presented during lectures. Online assessments were varied and timed, thus making it difficult for students to locate the required response from a textbook or the internet. This seems to suggest that if tasks are cognitively-demanding and are aimed at 'driving learning', there would be no reason to rely on proctoring software to reduce copying and plagiarism. The challenges of online assessment, e.g. copying and plagiarism are a real threat to the integrity and validity of online assessments. The solution to this challenge seems to lie with the lecturer and the kinds of assessment tasks that he/she designs. The Bb LMS/Ultra also has useful test and assignment settings that can be used to counter plagiarism. Training in the use of these to improve assessment practices would contribute to the development of quality assessments.

The scope of the study is a major limitation. Only two lecturers were interviewed in one type of institution (Historically-Disadvantaged, traditional university), as a result one cannot generalize the findings of the study to other university context-nationally and internationally.

8 Conclusion

The COVID-19 pandemic has provided a blueprint for change in higher education teaching and learning. However, most of the changes introduced in the learning environment were in response to the prevailing COVID-19 conditions. What remains now is for lecturers to engage in reflexive practice to determine the extent to which the changes/adjustments were informed by pedagogy and educational theory so that the necessary adjustments to classroom practice could be made.

The roles of teacher and students have also changed, with the student now expected to assume a more central and active role in his/her own learning and the lecturer strengthening his /her facilitative role and presence online or face-to face. This has implications for the professional development of lecturers as they prepare students for the 21st century within the context of the Fourth Industrial Revolution.

9 Further Research

Further research into the influence/impact of COVID-19 is needed in order to reach a comprehensive understanding and compare the experiences of HDIs and HWIs. Knowledge generated from these studies would help South African HEIs plan for blended teaching-learning experiences following the pandemic. Also, lessons learnt from universities in the Global North and the Global South would lay the foundation for a transformed higher education landscape where online pedagogy forms an integral part of teaching and learning.

10 Recommendations

Based on the findings discussed above, the study recommends as follows:

1. The pandemic has laid the foundation for blended learning, and in order to sustain and develop further the transformative and student-centred teaching-learning practices employed during this time, training of academic staff (in online pedagogy and blended learning) and students should be prioritized. Communities of practice, mentoring and coaching are additional training modes that could also be employed to improve lecturers' Technological and Pedagogical Content Knowledge (TPACK) – the kinds of knowledge needed for a teacher to successfully integrate technology into teaching.
2. Most South African universities offer the Post-Graduate Diploma in Higher Education and Training (PGDHET), the TeL module could be beefed up with content and research that focuses on the integration of technology into teaching and lessons learnt during the pandemic.

3. The student experience of teaching and learning during the pandemic needs to be interrogated in order to understand how the facilitation was received by students at this crisis time.

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