Online Teaching and Learning in the COVID-19 Era

Perspectives on Equity and Epistemic Justice

Edited by Felix Maringe · Otilia Chiramba

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Notes on Contributors

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Felix Maringe is Professor of Higher Education, current DVC for Academics at the University of Kigali, former head of the Wits School of Education and Assistant Dean for Internationalisation and Partnerships at the Faculty of Humanities. He researches in areas of International Education, Leadership in educational environments of multiple deprivation and in Decoloniality in Higher Education. He is the current editor-in-chief of the Journal of Educational Studies. After completing his doctorate, he was appointed as a lecturer at the University of Southampton where he worked between 2004 and 2012, rising to the level of Senior Lecturer. Felix was appointed at Wits as Associate Professor in 2012 and became full Professor in 2015 in the Department of Education Leadership and Policy Studies. He has supervised 30 doctoral students to completion; one just started in February 2022. Professor Maringe is extensively well published with 112 outputs

including 12 edited and jointly authored books. His peer-reviewed articles have been cited more than 5000 times and have a Google Scholar H-index of 31 and an i10 index of 55 indicating that 55 of his articles have been cited more than 10 times each. Three of his articles have achieved the status of classics after attaining more than 400 citations each. He is an NRF-rated scholar, an admitted Fellow of the South African Academy of Science and a Fellow of the British Higher Education Academy. Felix is the current editor-in-chief of the Journal of Education Studies hosted at the University of Venda. With Tony Bush, Felix recently completed research on school leadership in Africa sponsored by the VVOB Rwanda. He is currently working on two competitive research grants currently; research on the internationalisation of Higher Education in public universities in South Africa, sponsored by the British Council and the International Education Association of South Africa (IEASA); and the South African Council for Educators (SACE) grant on paraprofessionals in Education. His work on the impact of disruptions in education has been captured in commissioned outputs by the ZENEX Foundation and in a book series with AOSIS publishers.

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Shumani Leonard Tshikota is a highly accomplished Senior Lecturer in the Department of Professional and Curriculum Studies with a distinguished 20-year career in higher education. His expertise in the field of languages in education has made him an authoritative figure in his field. Dr. Tshikota has made significant contributions to academia throughout his career by supervising undergraduate, graduate, and doctoral students. He played a crucial role in the academic and professional development of a large number of aspiring scholars. Dr. Tshikota's leadership positions at the University of Venda demonstrate his dedication to educational excellence. Currently, he serves as the Teaching Practise Coordinator for the School of Education and presides over the Work-Integrated Learning (WIL) and Teaching Practise committee for the Faculty of Humanities, Social Sciences, and Education. His active participation in these crucial initiatives demonstrates his commitment to assuring the highest standards in teaching practice and curriculum development in Teacher Education. Dr. Tshikota is a prolific writer and researcher who has published extensively in journals that have been peer-reviewed and accredited. His contributions to the academic community also include writing books and chapters of books. His work demonstrates his profound knowledge and expertise in the field of languages in education, addressing important issues and advancing scholarly discourse. With his extraordinary accomplishments and knowledge, Dr. Shumani Leonard Tshikota continues to inspire and empower both students and colleagues in the field of education.

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Rethinking Hybrid Teaching in the South African Higher Education System: Promoting Equity and Epistemic Justice

Otilia Chiramba and Felix Maringe

Introduction

The COVID-19 pandemic emerged during a time when higher education institutions in South Africa were still grappling with significant challenges, largely related to issues of equity, equality and epistemic justice (Badat, 2020). This is despite the democratic government's expectations for higher education to play a critical role in eradicating non-human, racial and sexist social order through teaching and learning (Menon & Motala, 2021). Despite the achievement of democracy in 1994, racial inequality remained conspicuously evident. South Africa has a long-standing record of racial discrimination, and the efforts of higher education institutions to tackle racial inequalities have faced challenges.

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Access to quality education has been unequal, with historically disadvantaged black students facing barriers such as limited financial resources, under-resourced schools, and insufficient support systems (Ndzinisa & Dlamini, 2022).

The persisting challenge of language and cultural bias has endured in higher education for an extensive period. The dominance of English and Afrikaans as languages of instruction in higher education in South Africa has excluded students from diverse linguistic and cultural backgrounds (Mzangwa, 2019). This linguistic prejudice can hinder efficient learning and isolate students who lack proficiency in those languages. The curriculum continues to reflect a Eurocentric perspective. Historically, numerous higher education curricula in South Africa have given precedence to Eurocentric knowledge systems, disregarding indigenous knowledge and African perspectives (Ndofirepi & Gwaravanda, 2019). This marginalises indigenous students and perpetuates a narrow understanding of knowledge. The emergence of COVID-19 has heightened all these challenges. The COVID-19 pandemic also heightened the impact of the digital divide, as the increased reliance on online teaching methods highlighted its significance (Badat, 2020).

The transition to online education during the pandemic has brought attention to pre-existing inequalities in technology access and dependable internet connectivity. Students from disadvantaged backgrounds often lack the necessary resources to fully participate in online teaching and learning, exacerbating inequities in education. Although the online teaching and learning modality was introduced abruptly in universities across the world, as a reaction to the national lockdowns, the COVID-19 pandemic is perceived as an unexpected blessing since it has shed light on a long-standing issue of the utilisation of technology (Reed, 2022). Before the pandemic online teaching and learning has been used in universities, to a lesser extent, to supplement traditional face-to-face teaching and learning. However, in the effort to curb the spread of the pandemic and in response to the national lockdown, universities had to completely turn to online teaching and learning. Since its introduction in the last decades in some institutions, this modality proved to be a very significant new pedagogical mode, which enhanced effectiveness in teaching and learning (Beck, 2010; Stacey, 2007).

According to research conducted by Johnson et al. (2000), it has been established that students who opt for online learning outperform those who engage in face-to-face instruction. This is primarily attributed to the advantages offered by online teaching and learning, such as the availability of extensive platforms like learning management systems. These systems facilitate various activities, including the provision of lecture notes, resources, and self-assessment opportunities, which can be accessed at any time and from any location, as highlighted by Stacey in 2007. It is also effective in facilitating collaborative learning through computer-mediated communication for peer interaction and group activities, where this was once only possible in face-to-face learning situations (Beck, 2010). One of its greatest advantages is that it allows flexibility (Johnson et al., 2000). Students may learn in the spaces in which they feel most comfortable. However, it becomes a huge barrier if one does not have such spaces at home.

Face-to-face has been the standard mode of delivering teaching and learning in universities, for centuries (Beck, 2010). Its main value is that it takes the students out of their poverty at home and into an environment that provides a kind of equal access for all to teaching and learning. As such, face-to-face teaching and learning has, to a certain extent, narrowed the social justice and access gap between the haves and have-nots. Its advantages include the fact that students feel they access more and richer information through physical interaction with the lecturers and other students' body language and voice (Young & Duncan, 2014). It has always been a belief that body language speaks louder than words can. As a result, many people feel that learning is effective when it is also physical or interactive. Moreover, this obligatory tendency of attending course sessions in face-to-face learning is the major driver for some students to complete the courses (Stacey, 2007). It is also believed that, with face-to-face teaching and learning, lecturers get to build relationships with their students and try to understand them at an individual level to help them learn more effectively (Beck, 2010).

The transition to online teaching and learning amidst the pandemic has also shed light on the stark reality of unequal support systems in education. This shift in educational practices has had a disproportionate impact on students from disadvantaged communities, who often face

additional challenges and may lack the necessary support structures to thrive in this new learning environment (Milner, 2021). As a result, their academic progress has been hindered, exacerbating existing educational inequalities. One of the primary issues faced by students from disadvantaged communities is limited access to mentorship and guidance (Milner, 2021). In traditional classrooms, students benefit from direct interactions with teachers and mentors who provide valuable academic and emotional support. However, in the online setting, the absence of face-to-face interactions has made it challenging for students to receive individualised attention and guidance (García & Weiss, 2020). Without mentors or role models to turn to, students from disadvantaged backgrounds may struggle to navigate the complexities of online learning, leading to a potential decline in their academic performance (García & Weiss, 2020). Moreover, the lack of adequate academic guidance has further exacerbated the educational disparities. Students from disadvantaged communities often encounter difficulties in understanding complex concepts or completing assignments without personalised assistance (Milner, 2021). In a virtual learning environment, the absence of immediate clarification or one-on-one support can hinder their ability to fully grasp the material and keep up with their peers (García & Weiss, 2020). As a result, these students may fall behind academically, widening the already existing achievement gap.

The pandemic has also brought to light the long-standing exclusion of marginalised voices within higher education systems. The pandemic underscored the underrepresentation of marginalised voices within academic research and curriculum. Historically, many existing educational frameworks have perpetuated dominant narratives while neglecting the diverse perspectives and experiences of marginalised communities (McGee, 2020). The pandemic had an impact on marginalised groups and that had to do with the disproportionate health and economic burdens they faced (McGee, 2020). In South African higher education, marginalised voices, such as those from rural communities, indigenous populations, and disabled individuals, have faced significant and increased barriers in participating in academic discourse and research during the COVID-19 pandemic (Ndlovu & Nyoni, 2021).

This highlighted the importance of incorporating diverse perspectives and fostering inclusivity in the generation of knowledge.

It has been observed that in response to the challenges posed by the COVID-19 era, institutions are focusing on adjusting their approaches to teaching and learning. The primary emphasis of their planning revolves around the adoption and adaptation of various methods, with hybrid learning emerging as the most widely favoured option. Although commendable, there appears to be insufficient focus on fostering forward-thinking and transformative abilities within educational institutions and programs to ensure their resilience in the post-COVID-19 era. Currently, the response and focus on online and hybrid teaching and learning are geared towards short-term plans to recover lost time by adjusting to the circumstances, rather than planning for education beyond the pandemic. Such an approach, driven by the immediate needs and exigencies of recovery, is myopic and unsustainable. Our argument is that when universities respond to crises, they should support educational leadership in bringing about a transformation in education that goes beyond simply making up for lost time in the short term. In this chapter, we argue that institutional resilience may be the right framework to explore alternative methods of leadership during times of crisis. We argue that through educational leaders' commitment to promoting institutional resilience, universities may pave way to equity and epistemic justice for all post-COVID-19.

The chapter aims to explore viable methods to enhance hybrid teaching and learning as a feasible educational model, considering the growing influence of technology and digitalisation in education, particularly in the context of the advancing Fourth Industrial Revolution (Choung & Manamela, 2018).

The chapter is guided by the question: *How can universities harness hybrid teaching and learning approaches in ways that help to establish a more robust framework for advancing equity and epistemic justice beyond the pandemic in higher education?*

The chapter begins by defining two concepts, equity and epistemic injustice and hybrid learning showing their significance, particularly in times of disruptions. It adopts an organisational resilience framework to argue for the need to rethink post-COVID-19 education, focusing

on persistence, adaptability, and transformability as essential aspects. This theoretical analysis delves into the implications for institutions and curricula, highlighting the integration of resilience theory in the reconstruction of South Africa's education systems. The chapter looks at different ways in which equity and epistemic justice issues happen in society and in higher education in general.

The Conceptual Terrain

What Is Equity?

Equity in South Africa refers to the concept of fairness, justice, and equal opportunities in various aspects of society, particularly in relation to historically disadvantaged groups such as Black South Africans (Badat & Sayed, 2014). It is a fundamental principle enshrined in the country's constitution and is aimed at addressing the deep-rooted inequalities that were created during the era of apartheid (Badat, 2008).

The term "equity" in the South African context is closely associated with the policy of affirmative action, which seeks to redress historical injustices by promoting the inclusion and advancement of previously disadvantaged individuals in areas such as education, employment, and business opportunities (Badat, 2008). Affirmative action measures are implemented to ensure that individuals from marginalised communities have equal access to resources, opportunities, and decision-making processes (Wessels, 2005).

The notion of equity is also linked to the broader concept of social justice in South Africa. The government has implemented various policies and programs to promote equitable distribution of resources and opportunities, such as land reform initiatives, Black Economic Empowerment and Broad-Based Black Economic Empowerment (Patel & Graham, 2012). These policies aim to address economic disparities and promote the meaningful participation of previously marginalised groups in the economy (Patel & Graham, 2012). Furthermore, the South African legal system recognises the principle of equity, which is applied in various areas of law, including labour law, constitutional law and human

rights law. The courts play a crucial role in interpreting and enforcing equitable principles to ensure fairness and justice in the country (Badat, 2008).

A Conceptual Overview of Hybrid Learning

According to Watson (2008), institutions use terms such as hybrid or blended learning synonymously. However, in this article, we refer to it as hybrid learning as it is commonly used in South Africa. While hybrid learning has been extensively discussed and implemented, there is no universally accepted definition. Different educational institutions and researchers may have their own interpretations and implementations of hybrid learning.

Garrison and Vaughan (2008) define hybrid learning as an educational approach that combines traditional face-to-face instruction with online learning activities. This approach harnesses the advantages of both modes to enrich the learning experience. Bonk and Graham (2012) contend that hybrid learning involves a mixture of in-person classroom sessions and online interactions. The in-person component typically involves classroom-based instruction, discussions, group work, and hands-on activities facilitated by a teacher or instructor (Garrison & Vaghan, 2008). The online component incorporates digital resources such as educational videos, interactive modules, discussion boards, and assessments. These online components can be accessed through learning management systems or other online platforms (Bonk & Graham, 2012) Hybrid learning provides greater flexibility, personalised learning and the integration of technology into the educational process (Bonk & Graham, 2012).

Understanding Epistemic Justice

Epistemic justice (Fraser, 2009) is an important goal in South Africa, a country known to be among the most unequal societies in the world. We thus see this chapter as important as it advocates for institutional

resilience as a basis for promoting equity and epistemic justice. In this regard, we intend to explore how the resilience theory will help in promoting the transformational agenda (Jeans et al., 2017).

The chapter focuses on the issue of equal learning opportunities in diverse home environments, taking into account theoretical and empirical studies conducted by scholars in South African universities and the surrounding region. It employs the concept of epistemic injustice as a framework for understanding this topic. The chapter aims to define and describe various types of epistemic injustice, providing a foundation for analysing and examining the consequences of shifting from traditional face-to-face education to online teaching and learning methods.

The concept of epistemic injustice was introduced by Fricker (2007), a British philosopher, who defined it as the mistreatment of individuals based on their role as knowers or as subjects of knowledge. In her later work (Fricker, 2017, p. 54), Fricker provided a more comprehensive explanation of epistemic injustice as the deliberate act of diminishing or disadvantaging someone in relation to their position as a subject of knowledge. Epistemic injustice can take the form of direct or indirect discrimination (Fricker, 2017). When discriminating against others, there may be intentional motives involved. For instance, in the case of epistemic violence, individuals may seek to exert intentional dominance over certain groups, such as colonised peoples. Alternatively, epistemic injustice can be unintentional, as when a system inadvertently perpetuates epistemic coloniality. Unintended epistemic coloniality has been prevalent in higher education systems during the post-colonial era, where the lasting influence of colonial value systems is sustained by entrenched structural forces.

Fricker (2007) classified two types of epistemic injustice, namely testimonial injustice and hermeneutical injustice. Testimonial injustice, as defined by Fricker, refers to the unfair dismissal of individuals' ideas and perspectives based on their identities. It involves a biased prejudice where the speaker is unjustly judged and perceived as intellectually inferior (Fricker, 2017, p. 55). Consequently, this treatment has negative repercussions on how they are perceived and treated outside of epistemic contexts. For instance, the evaluation and prioritisation of ideas have predominantly been influenced by a lens of masculinity rather than

femininity (Coady, 2017). Additionally, people's views and thoughts are often assessed through the filter of their sexualities. In the realm of higher education, decision-makers in universities tend to formulate solutions that align with the value systems of the middle class, which many of them belong to (Medina, 2012). As a result, the views of students from lower-class and working-class backgrounds are typically not given due consideration as a basis for conceptualising solutions (Berenstain, 2016; Medina, 2012).

Alternatively, hermeneutical injustice refers to the manner in which individuals in positions of authority interpret the experiences of others, employing established frameworks of thinking that promote dominant models for understanding those individuals' lives (Fricker, 2007). It also encompasses the way in which those individuals interpret their own lives. Frequently, these individuals perceive their circumstances and existence as conforming to the categories established by the powerful, such as being inferior, impoverished, ignorant, culturally backward, or uncivilised (Grasswick, 2017). Consequently, when they internalise these categorisations, they often exhibit decreased agency in their lives and become more reliant on the solutions and assistance provided by those in power (Doston, 2012). This chapter aims to assess the degree to which these marginalised student groups are excluded from participating in university life and the creative problem-solving process through a hermeneutical lens.

A synthesis of the key ideas emerging from all the challenges associated with transitioning from face-to-face to online modalities may equip universities with an understanding of how they might build resilience around hybrid teaching and learning. We believe exercising social justice and building resilience starts by understanding issues and challenges related to this transition.

Higher Education as a Middle-Class Project: Understanding Inequity and Social Injustices Within Universities

The culture of higher education is often perceived as unfamiliar, particularly for the working class and individuals from low socio-economic backgrounds (Berenstain, 2016). It has largely been labelled as a project primarily associated with the middle class, creating numerous obstacles for students who come from working-class backgrounds. The response to the COVID-19 pandemic has predominantly mirrored middle-class values, further exacerbating the disparities in participation for the majority of working-class students.

In other words, the COVID-19 pandemic has worsened and expanded pre-existing inequality gaps, which are evident in the stark divisions within the field of literature. Examining the concept of these divisions within higher education allows us to not only comprehend the nature of inequalities within the sector but also consider methodological aspects when approaching and conducting studies on the subject. These divisions consistently narrate a tale of persistent inequalities within the sector.

One notable division is the racial divide, which clearly demonstrates the presence of achievement gaps among students in higher education based on their race. In the context of South Africa, Heaton et al. (2014) provide compelling evidence that although the racial achievement gap has been narrowing since 1994, it still persists and seems to widen as students grow older. By the time students reach university, the achievement gap is even more pronounced than it was during their younger years.

The primary factors contributing to this divide have been identified and tend to include factors of family background, the type of school attended, and access to qualified teachers, among others (McKeever, 2017).

In higher education, gender serves as another prominent division. According to Evans et al. (2020), who conducted a study encompassing 126 countries, including South Africa, from 1960 to 2020, it

is evident that while female participation in higher education has shown a steady increase over time, male students tend to have an advantage in terms of participation and achievement in STEM subjects. This bias can be attributed to various structural and systemic factors, such as the type of schools students attend, parental and societal expectations, and employer prejudices and preferences for male scientists over their female counterparts as highlighted by Bertocchi and Bozzano (2019).

Furthermore, the urban–rural divide constitutes a significant split in higher education. The allure of urban areas often leads to the concentration of highly skilled and qualified teachers in urban schools, while rural schools struggle with severe shortages of teachers and face persistent staff turnover as educators migrate to urban centres at the first opportunity. Additionally, rural schools typically suffer from inadequate resources, resulting in compromised quality and effectiveness of learning. Consequently, students from rural backgrounds encounter more difficulties in adjusting to university learning, often falling behind their counterparts who attended urban schools, as discussed by Lembani et al. (2020).

In relation to the urban–rural divide, there exists a significant digital divide. Choung and Manamela (2018) have concluded that despite the widespread use of information and communication technologies (ICTs) in South Africa, a substantial gap remains, characterised by disparities in technology and device access. This divide primarily stems from issues such as affordability, limited internet access and weak signals. As a result, many students from rural areas arrive at universities with little to no experience in using smartphones and laptops. The impact was particularly harsh on first-year students, who had only spent a month at the university before the lockdown was imposed on March 20.

Understanding the causes of these gaps is crucial, especially considering that online teaching and learning heavily rely on technology. Therefore, when designing studies and recruiting research participants, it is important to include individuals representing these four significant divisions. By doing so, higher education institutions worldwide may need to consider altering their cultures in order to facilitate wider participation from diverse working-class student groups. However, it is essential to manage this change carefully, ensuring that working-class students

feel a sense of belonging and are not merely expected to conform or be treated as exceptions within a predominantly middle-class system.

Resilience and the Need to Construct Resilient Universities

In the field of resilience, four capacities are deemed to promote organisational resilience. These are adaptive, adoptive, anticipative and transformative capacities (Bahadur et al., 2015; Jeans et al., 2017). Jeans et al. (2017) and Bahadur et al. (2015) have outlined how the four capacities could help institutions come up with robust frameworks for any organisation to improve the worthwhileness of the experiences of people within organisations. A common meaning of resilience involves the ability to bounce back when faced with adversities (Siebert, 2005). Specifically focussing on higher education institutions, the universities may want to equip the students with necessary tools and skills to bounce back in times of challenging circumstances. As a result, focussing on the time of the pandemic and the move to online teaching and learning was to be accompanied by universities strategies on how each student despite their backgrounds would benefit from the new way of teaching without further widening the gap between the privileged and less privileged students.

There should always be a realisation of rights and well-being in the midst of change. In other words, agency, empowerment and choice should also be central in our desire to change (Jeans et al., 2017). The kind of change brought by the pandemic is what Jeans et al. (2017) have seen as rapidly transforming systems, as a result, causing suffering, turbulence, and uncertainty. As a result, Jeans et al. (2017 p. 1), resilience becomes the ability to enhance the capacities "to proactively and positively manage this change in ways that contribute to a just world without poverty". The four capacities have been seen as essential, interconnected and mutually reinforcing and exist at multiple levels and therefore have been raised as central in achieving epistemic justice especially in times of disruptions (Bahadur et al., 2015; Jeans et al., 2017). The other significant characteristic of these capacities is that they overlap, therefore, one

capacity cannot be enhanced in isolation from the other three (Jeans et al., 2017). It should always be noted that there are always unique and specific perceptions in describing resilience and capacities and this is usually informed by the contexts.

Creating Resilient Institutions Through Hybrid Teaching and Learning in South Africa

In the aftermath of the COVID-19 pandemic, the educational landscape has witnessed a significant shift, where neither traditional face-to-face nor online learning methods hold a dominant position in academic discussions. In recent times, a novel method known as hybrid learning has surfaced, amalgamating both online and face-to-face modalities. This hybrid model is gaining traction in higher education because of its potential to accommodate a wide range of student needs and learning objectives, both presently and in the future.

While it is challenging to predict and visualise the exact future of education, hybrid learning has the potential to play a significant role in shaping the higher education landscape. However, for hybrid learning to contribute significantly to equity and epistemic justice issues, it needs to integrate the best aspects of both traditional classroom-based instruction and online learning platforms (Ali, 2020).

Attard and Holmes (2022) provided five reasons that make hybrid learning a promising approach to promoting equity and epistemic justice for all. They argued that when practised properly, hybrid learning offers students greater flexibility in terms of when and where they engage with course materials. It allows learners to access content remotely, providing convenience for those with diverse schedules or geographical constraints (Attard & Holmes, 2022). Rather than solely depending on advanced technology, universities should also consider harnessing the potential of simple technology that is already being utilised by students from low socio-economic backgrounds. Secondly, some scholars believe that hybrid learning models often incorporate both adaptive technologies and personalised learning approaches (Attard & Holmes, 2022; Engelbertink et al., 2020). Hybrid learning can also tailor the learning experience to

individual students, focusing on their strengths, weaknesses, and learning preferences. Hybrid learning environments can leverage a variety of tools, multimedia resources, and interactive platforms to engage students in new and dynamic ways and this leads to increased student participation and motivation. It has also the potential to reach a broader audience, including non-traditional students who may have work or family commitments that prevent them from attending classes in person. It also opens up opportunities for international students who may not be able to travel for education (Attard & Holmes, 2022).

One other significant factor about hybrid learning is that it can be cost-effective. It has proved to reduce costs for both students and institutions. Students can save on reduced commuting and housing expenses associated with attending physical classes, while institutions may benefit from reduced infrastructure and maintenance costs (Jenkins & Smith, 2021).

Embracing hybrid teaching and learning in a meaningful way may promote institutional resilience. Universities require to carefully consider pedagogical strategies and technological infrastructure. When teaching students who lack resources, several technological infrastructure options can be used to enhance their learning experience. A few examples are provided below:

- Utilising affordable devices such as low-cost laptops, tablets or refurbished computers can provide students with access to digital resources, educational software and online platforms (Maringe et al., 2020).
- Implementing learning management systems allows teachers to deliver content, assignments, and assessments online. Moodle, Canvas or Google Classroom are popular LMS options that facilitate remote learning and can be accessed from various devices (Badaru & Adu, 2022).
- Open educational resources are freely available educational materials like textbooks, videos, and interactive tools. These resources can be accessed online, downloaded and distributed to students, reducing the need for costly textbooks (Huang et al., 2020).
- Leveraging mobile devices, even basic ones, can expand access to educational content. Mobile learning platforms, educational apps and

SMS-based learning systems can deliver lessons, quizzes and educational materials to students' smartphones (Maringe et al., 2020).

- Collaborating with local communities, governments, or NGOs to provide internet connectivity options can help bridge the digital divide. This may involve setting up community Wi-Fi hotspots, mobile data plans or utilising offline content for download and offline access (Marimuthu et al., 2022).
- Platforms like Zoom, Microsoft Teams or Google Meet enable live video conferencing, allowing teachers to conduct interactive virtual classes, provide instruction and engage with students in real-time (Azlan et al., 2020).
- Access to online platforms like Khan Academy, Coursera or YouTube's educational channels can supplement classroom teaching. These platforms offer a wide range of educational resources, video lectures and interactive activities (Llorente & Morant, 2015).
- Deploying offline digital content can be helpful in areas with limited or unreliable internet connectivity. This includes preloading educational content onto devices or distributing offline educational resources such as educational DVDs or USB drives (Sobotkova et al., 2021).
- Platforms like Google Docs, Microsoft Office Online or collaborative whiteboards enable students to work together on projects, share documents, and collaborate remotely (Williams, 2022).
- Using online assessment tools like Quizizz, Kahoot or Google Forms allows teachers to create interactive quizzes, surveys and assignments to assess students' understanding (Junior, 2020).

It's important to note that while technology can play a significant role in providing resources to students who lack them, it should be complemented with other strategies like teacher training, community involvement, and addressing infrastructural challenges to ensure a holistic approach to education for all students., faculty and student readiness, and ongoing support. A thoughtful combination of pedagogies that align with the learning objectives and student needs help create an engaging and successful hybrid teaching experience. With effective implementation, hybrid teaching and learning can create transformative

learning experiences and prepare students for the dynamic challenges of the twenty-first century.

This chapter recommends that to ensure the delivery of high-quality higher education, it is essential to incorporate a hybrid approach that values both components of online and in-person modes of teaching and learning. In the context of effective hybrid teaching and learning, the utilisation of resources should be adaptable and efficient. The teaching and learning process should allow for adjustments to be made, when necessary, in order to optimise the hybrid learning experience and culture of openness and fairness must be fostered.

Synopsis of the Chapters of the Book

Chapter 2 is titled *Digital Education Ecosystems to Achieve Instructional Equity and Cognitive Justice*. Dlamini and Mhlongo argue that the pandemic has resulted in a shift in the instructional delivery and the learning processes. For them, Information and Communication Technology adoption has become central in the transition to remote teaching and learning. They argue that the demand for digital competences cannot be underestimated in education systems that are largely teacher centric. They therefore explore the theoretical contours of teaching and learning as a relational property of the three-way interaction posited by Anderson (2003) consisting of students, content and educators to enable greater engagement and ultimately create cognitive justice.

Chapter 3 is titled *Streaming Content Online and Supporting Initial Teacher Educators During COVID-19 Pandemic.* Tshikota discusses the use of streaming content online to support initial teacher educators during the COVID-19 pandemic. With the closure of higher education institutions due to the pandemic, online teaching and learning became the alternative to face-to-face contact teaching. However, this shift adversely affected institutions, especially those in rural areas, due to challenges like lack of infrastructure. The chapter highlights the inequality in online teaching and learning in institutions, as revealed by data collected through document analysis and questionnaires. The

findings emphasise the importance of internet data availability and user-friendliness of online tools for higher education institutions to effectively support Initial Teacher Educators online.

Chapter 4 is titled *The Imperatives for Disadvantaged Students Support in HE in the COVID and Post-COVID-19 Era*. Masinire and Moyo argue that prior to democracy, Higher Education in South Africa and other countries has been a preserve for the elite. However, with the establishment of democratic institution, previously disenfranchised and disadvantaged students, mainly blacks entered the Higher Education space and what became evident was the enormous number of barriers to access, participation and achievement, which these students had to contend with during their day-to-day experiences in higher education. With the coming of the COVID-19 pandemic and urgent response of higher education to the pandemic to ensure the academic project is sustained, the responses were too broad and thus failed to adequately deal with the particular needs of disadvantaged students.

Chapter 5 is titled *Psychological Barriers on Adjustment to Online Teaching and Learning in Universities During COVID-19 Pandemic: A Social Justice Theory Perspect*ive. Aloka, Ajayi, Zindoga and Mnyamana examine the challenges faced by academic staff in universities in adjusting to online teaching and learning during the COVID-19 pandemic. It is based on a thorough review of published literature from a social justice perspective. The chapter argues that psychological barriers hindered the successful adaptation to online teaching and learning among academic staff, which encompassed stress, heightened anxiety and depression, limited social interactions leading to complex consequences due to a lack of social connection. Additionally, the sudden transition to online instruction and preparation resulted in a lack of experience and preparedness. Academic staff also struggled with self-motivation, inadequate e-learning resources and technical difficulties. The study recommends that universities implement regular mental health programs for academic staff to promote social justice.

Chapter 6 is titled *Digital Revolution in Higher Education in the COVID-19 and Post-COVID-19 Era.* Dlamini argues that the emergency

shift to remote teaching and learning had significant financial consequences for students' families, governments, and universities, particularly in developing and emerging economies with economic challenges, limited digital literacy, and inadequate infrastructure. Taking a critical perspective on technological determinism, the chapter explores the effects of the digital revolution on higher education, highlighting social inequalities and digital resource disparities. It also examines the intersection of digital technologies with education and class disparities in emerging economies worldwide. A literature search using Google Scholar resulted in 34 studies being included and analysed from 241 records. Despite the established role of digital technologies in the transition to remote teaching, evidence suggests that factors such as cost, connectivity, and digital literacy hindered the shift, creating inequities that left some students unable to participate. In response to the challenges of COVID-19, the chapter advocates for leadership in developing a digital education strategy and culture to navigate uncertain disruptions effectively. Furthermore, universities are encouraged to reimagine inclusive and transformative pedagogical approaches, particularly in the context of emerging economies.

Chapter 7 is titled *An Analysis of COVID-19 Related Factors That Affect the Girl-Child's Access and Participation in Education*. Madhlangobe and Moyo examine the impact of the COVID-19 pandemic on girls' access to and success in primary education. Using a mixed-method approach, the study collected quantitative and qualitative data through a survey. The findings revealed that the pandemic created challenges for learners, especially girls, who lacked electronic devices and internet access for online learning. Cultural practices and social status further limited girls' opportunities during the pandemic. The study suggests that authorities should ensure that cultural values and beliefs do not override legal measures for disaster response. Future research should explore the experiences of rural girls and how COVID-19 has affected their lives.

Chapter 8 is titled *Managing Change from Face-to-Face to Online Teaching and Learning in Higher Education During the COVID-19 Pandemic: Implications for Equity and Epistemic Justice.* Maposa and Chakanyuka review various scholarly literature to examine the diverse effects of online education on equity and epistemic justice. The chapter

highlights the importance of fair access to technology and learning resources, inclusive course design, and support for diverse student populations. The authors propose evidence-based strategies and best practices for higher education institutions to effectively manage the transition to online teaching while promoting equity and epistemic justice, using the Change Management Framework. They also explore the implications of online education on knowledge production, distribution, and recognition within higher education institutions. The authors offer insights and recommendations to mitigate potential disparities and foster a more equitable and just educational system.

Chapter 9 is *titled Protective Factors for Adjustment to Online Teaching During the COVID-19 Pandemic: A Social Justice Perspective*. Aloka, Ajayi and Olendo examine the factors that contribute to successful adaptation to online teaching during the COVID-19 pandemic. The chapter employ a social justice perspective in education and utilise a theoretical review as the research methodology. Based on the findings, it can be concluded that several factors act as protective measures for teachers adjusting to online teaching during the pandemic. These factors include the development of social and emotional skills among teachers, receiving concrete support based on individual needs, fostering staff resilience, building self-efficacy in online teaching, and promoting social connectedness among staff and students at universities. In light of these conclusions, the chapter suggests that universities should implement social support mechanisms to enhance social justice for both staff and students, preparing them for future pandemics.

Chapter 10 is titled *Teacher Education in the Post-COVID-19 Era: A Prospective View*. Maringe and Chiramba synthesise the evidence drawn from the chapters of the book, suggest implications and arrive at conclusions. In particular, the chapter has placed emphasis on how equity and epistemological justice manifest in the preceding chapters and the need for further research identified across the chapters of the book and an evaluation of ways in which higher education institutions need to build, into their strategies, policies and frameworks for integrating institutional and programmatic resilience, in the event of future catastrophes.

Conclusion

The main objective of this book is to bring together scholars with diverse perspectives to discuss the challenges and opportunities of online teaching and learning during and after the COVID-19 pandemic. The book specifically focuses on the concepts of equity and epistemic justice in teaching and learning amidst pandemics. However, there is a limited amount of scholarly reflections on equity and epistemic justice in teaching and learning during COVID-19. It has become crucial to understand the impact of online, hybrid and blended learning on a national and international scale as digitisation becomes increasingly important in all sectors.

Given this context, the book examines how higher education has addressed equity and epistemic justice in teaching and learning from various viewpoints. The chapters in the book draw upon conceptual, theoretical and empirical evidence. By highlighting challenges and opportunities, the book explores six themes that imply different notions of social justice, which are as follows:

1. Cognitive Justice in hybrid and online teaching and learning
2. Bridging the digital divide and supporting marginalised students
3. Obstacles faced by staff in online teaching and learning
4. Managing crises in societies with existing inequalities
5. Gender issues in educational crises
6. Social justice in the face of educational crises

Through a synthesis of evidence, the book emphasises fundamental challenges such as the persistent and deepening crisis of the digital divide and the emergence of global digital colonialism, among others. It also highlights opportunities for promoting equity and epistemic justice in teaching and learning, such as improved access to data and knowledge repositories, real-time information sharing, curriculum changes and the use of innovative pedagogical approaches. This opening chapter aims to establish connections across the subsequent chapters. A more detailed discussion of the themes, challenges, and opportunities related to equity

and epistemic justice in teaching and learning in higher education can be found in Chapter 10.

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2

Digital Education Ecosystem to Achieve Instructional Equity and Cognitive Justice

Reuben Dlamini and Siyabonga Mhlongo

Introduction

The significant impact of the coronavirus disease 2019 (COVID-19) pandemic has resulted in a shift in the instructional delivery and the learning processes. Higher education institutions (HEIs)—which include universities and colleges—have experienced major disruptions, which necessitated that lecturers find alternative ways to deliver their instructions on the one hand, and that students accept their new identities as digital citizens of online platforms on the other hand. This has brought to the surface various dimensions of social difference (most visibly, that of

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inequality), perpetuated by invisible structural deficits within these HEIs. Lecturers were expected to create enabling digital learning environments, abuzz with engaging instructional activities and interactivity, while also providing feedback to students timeously to ensure both social and instructor presence. Social and instructor presence are imperative components of digital education (Akcaoglu & Lee, 2016; Aloni & Harrington, 2018; Garrison, 2016). Social presence is "the degree to which a person is perceived as a 'real person' in mediated communication" (Gunawardena, 1995, p. 151), while instructor presence is said to be "the specific actions and behaviours taken by the instructor that project him/herself as a real person" (Richardson et al., 2015, p. 259). Therefore, academics are expected to design and facilitate discussions, and allow students to participate within the framework of the learning objectives.

Well-designed interactive activities and discussions advance students' social presence and create opportunities for students to relate their prior experiences to the course content (Joksimović et al., 2015; Tirado Morueta et al., 2016). The COVID-19 pandemic restrictions on social distancing pose a serious challenge for lecturers to design learning activities that are pedagogically informed, and which make effective use of digital technologies and learning platforms. If the issue of instructional equity and access is not adequately addressed, there is a real risk that the inequality gap among students will widen. This is a call-to-arms for HEIs and government to reimagine education and invest in both infrastructure and human resource development in order to transform face-to-face courses. Yes, digital learning platforms allow lecturers to provide and manage digital learning resources in an integrated way, but building interpersonal connections is important and demands a higher level of creativity.

Akcaoglu and Lee (2018) identified social interaction as "a key component for learning" and subsequently emphasised that "interpersonal interactions are essential to building a classroom community to support and scaffold learning" (p. 334). Although both social and interpersonal interactions are highly desirable in Emergency Remote Teaching (ERT) and online learning, they are difficult to achieve. With the implementation of ERT, the expectation was that lecturers would create supportive and engaging learning environments as essential building blocks for

students to maintain connection with the course, thus making learning more meaningful. Notwithstanding, the speed at which the transition to ERT and online learning was expected to happen was "unprecedented and staggering" (Hodges et al., 2020, para. 2). Digital technologies and learning platforms were expected to serve as catalysts for the transition, with no consideration to instructional design principles and widely accepted understanding of how remote teaching and online learning modalities intersect.

This chapter presents an understanding of the foregoing within connectivist thought, influenced by the four key principles of learning: autonomy, connectedness, diversity and openness as guideposts to ensure meaningful engagement and interactions between students and content, lecturers and students, as well as students and students.

Theories of Learning

It has been widely accepted that the theories of learning have evolved chronologically from those based on behavioural models in the early 1800s—grouped together under behaviourism, to those that relied on models and theories based on cognitive sciences, which came into prominence towards the late 1950s as an outgrowth of behaviourism—grouped together under cognitivism, to those centred around learning as a function of an individual's ability to create or construct meaning based on his/her own experiences and cultural dispositions, which came about in the early 1990s as a shift away from the objectivistic philosophical assumptions underlying both behaviourism and cognitivism—grouped together under constructivism (Anderson & Dron, 2011; Dennen et al., 2018; Ertmer & Newby, 2013; McCombs, 2000; Siemens, 2005; Tschofen & Mackness, 2012).

The turn of the century ushered in connectivism, touted as "a learning theory for the digital age" (Siemens, 2005). This was aligned with the exponential growth of and access to the technological tools that enabled learning—particularly underpinned by the proliferation of the internet and changes in teaching methods—the basis of which was constructivism, and the emergence of a new kind of learner who appears to

fundamentally differ from learners in previous generations (Ertmer & Newby, 2013). Connectivism, which is epistemologically grounded on "connective knowledge"[1] (Downes, 2008), advocates that "knowledge is distributed across a network of connections" (Downes, 2007, para. 1), which comprises learning communities or nodes. These nodes represent a "clustering of similar areas of interest that allows for interaction, sharing, dialoguing, and thinking together" (Siemens, 2003).

Connectivism is characterised by four key principles: (i) autonomy, (ii) connectedness (interactivity), (iii) diversity and (iv) openness. These key principles primarily serve to describe the traits of a connective knowledge network (Downes, 2007, 2008, 2009, 2010; Siemens, 2006). In addition and more pertinent, they inform, mediate and guide the nature of learning within such a network (Tschofen & Mackness, 2012). Learning in connectivist thought thus becomes a realisation of these four key principles, demonstrated by the ability by the learner to traverse the nodes of this connective knowledge network (Downes, 2007).

This presents a challenge to the teachers as they now have the task of creating new learning experiences for the learners by leveraging the possibilities born out of the digital age in order to engage learners in ways that best meet their needs (Ertmer & Newby, 2013). This challenge is further exacerbated by the fact that "more and more young people [learners] are now deeply and permanently technologically enhanced, connected to their peers and the world in ways no generation has ever been before" (Prensky, 2010 cited in Ertmer & Newby, 2013, p. 66). This task of creating new learning experiences is centred around the classroom, a modern learning environment, which itself is no longer recognisable in comparison to those of yesteryear.

[1] "A property of one entity must lead to or become a property of another entity in order for them to be considered connected; the knowledge that results from such connections is connective knowledge" (Downes, 2008, p. 77).

The Modern Learning Environment

The modern learning environment, which is a physical environment in which learning is intended to occur, comprises a variety of connected end-devices, audio-visual tools and assorted media, all of which empower the teacher and learners with a freedom of choice (Eady & Lockyer, 2013; Gütl & Chang, 2008). Additionally, other physical design components such as colouring, furniture, acoustical control, lighting and ventilation all contribute to the definition of a modern learning environment (Chan, 1996). Chan further attests that "[a] well designed learning environment takes into consideration the essentials of the learning process and the latest technological developments" (Chan, 1996, p. 13). Such essentials of the learning process, according to Armstrong (2014), incorporate the social and pedagogical contexts in which learning takes place. It is essential that a modern learning environment "reflects and supports what is current in terms of pedagogical practice" and is "capable of evolving and adapting as educational practices evolve and change – thus remaining modern and future focused" (Armstrong, 2014, p. 9).

Learners and Learning in a Modern Learning Environment

There are several ways in which the composition of learners in a classroom can be described. One such way was introduced as the VARK model by Fleming (1995). This pedagogical profiling model rests on the premise that there are four modes of information presentation, with each mode appealing to a specific distinct group of learners. The first group comprises those learners who prefer information synthesised and presented visually (V) in the form of graphs, charts, mind-maps or flow diagrams. The second group of learners have a preference for aural (A) information, meaning that they find conversations, group discussions and general speech most appealing. The third group of learners prefer interacting with information through reading and/or writing (R), which may include reading through books, articles or reports as well as writing essays or blogs. The final group of learners, described as kinesthetics (K),

prefer using all their senses, including touch, hearing, smell, taste and sight, and generally learn through real-life experiences or suitable analogies. Fleming (1995) articulates that using this model "can provide a focus for developing strategies that are tailored for individuals" which can ultimately help in overcoming "the predisposition of many educators to treat all students in a similar way" (p. 308).

Another way of classifying learners in a classroom is to differentiate them based on their personalities, however, the challenge with this approach is that it is not systematic and may be prone to subjectivity. From a multitude of research perspectives, it is generally accepted that learning is a complex process in which "meaningful and sustained learning is a whole person phenomena" (McCombs, 2000, p. 3). This implies that in order to achieve the ultimate goal of learning, which de Corte (2010) succinctly states as acquiring "the ability to apply meaningfully-learned knowledge and skills flexibly and creatively in different situations" (p. 45), the learner, content and teacher (Anderson, 2003) become inextricably inseparable in the interactive process of teaching and learning. The ubiquitous nature of technology in modern learning environments, coupled with its rapid and perpetual propensity to advance, plays a pivotal role in facilitating this three-way interactive process, essentially extending the boundaries of learning beyond the confines of a physical classroom (Dumont & Istance, 2010).

Technology Affordances in a Modern Learning Environment

A further and necessary step following the incorporation of technology in a learning environment is to understand its properties that attract its use by potential users. Researchers have conceptualised frameworks that assist in facilitating and understanding the mutual relationship between ICT and its uses. Notably, Conole and Dyke (2004a) conceptualised a generic taxonomy of ICT affordances comprising ten key aspects or characteristics to consider with the use of ICTs. They clarified that by affordance they meant the relationship between the infrastructure of ICT and the people's use of this infrastructure, specifically: "what uses ICT

invites and facilitates, what it lends itself to and what it can do well" (Conole & Dyke, 2004a, 2004b, p. 301). Table 2.1 lists these ten key aspects and presents a brief description of each.

This taxonomy becomes useful for both teachers and learners when considering which type of technology to use and for which purpose. For instance, for quick or immediate learner-content, learner-learner or learner-teacher interactions, technologies under the instant messaging (IM) banner (activated primarily by the *accessibility*, *communication and collaboration* and *immediacy* affordances) become the most appropriate; for asynchronous collaborative requirements, technologies such as wikis and discussion boards (activated primarily by the *reflection* affordance) become the most appropriate; and so on.

While this taxonomy offers a multitude of choices and possibilities with respect to choosing and using ICTs, the bottleneck becomes the lack of digital competences in teachers and learners, which are necessary in order to unlock the usefulness (and appropriate use) of technologies available in modern learning environments. Moreover, taking full advantage of these technologies requires additional capabilities by teachers to solidify the relationship between their pedagogic expertise and the utility of these technologies.

Theoretical Contours to Teaching and Learning

Before tackling the issue of rethinking teaching and learning in the midst of the COVID-19 pandemic, we take a closer look at teaching and learning as a relational property of the three-way interaction posited by Moore's (1989) three-part model of interaction, "learner–content interaction, learner–instructor interaction, and learner–learner interaction" (p. 1). Clearly, there is equal value in the three-part model of interaction to enable greater engagement and ultimately create cognitive justice. In this chapter, interaction is given a higher value in a blended learning context (Miyazoe & Anderson, 2010b). According to Miyazoe and Anderson (2010a), interaction "is a key to foster, support and engage learning" (p. 1). Yes, digital technologies provide great diversity of tools

Table 2.1 A taxonomy of ICT affordances

Technology affordance	Description
Accessibility	"The range of ICT now available offers relatively easy access to vast amounts of information through a variety of different mechanisms" (p. 116)
Speed of change	"The immediacy of access to rapidly changing information or events is a core feature of new technologies, enabling unprecedented speed of access to materials and world events as they happen" (p. 116)
Diversity	"ICT offers access to a vast range of diverse and different experiences that can inform learning such as overseas web sites, access to subject experts, or use of simulations to replicate complex behaviour" (p. 117)
Communication and collaboration	"New technologies have opened up the possibility of new forms of dialogue and communication" (p. 117)
Reflection	"Asynchronous technologies (in particular) offer the potential for encouraging reflection and critique, with users engaging in discussions over a longer time frame than is possible in face-to-face discussions" (p. 118)
Multimodal and non-linear	"ICT enables the learner to move beyond linear pathways of learning…and to adopt more individualized strategies and pathways" (p. 119)
Risk, fragility and uncertainty	"Connected to risk are the unintended consequences of actions…the technologies have not necessarily been taken up or used in the ways originally intended" and the "increased use of technologies by different groups of users often gives rise to unintended consequences" (p. 120)

(continued)

Table 2.1 (continued)

Technology affordance	Description
Immediacy	"The speed with which information can be exchanged via the web and email has led to a shift in user expectations in terms of response times to requests from other users" (p. 120)
Monopolization	"Convergence and divergence of different technologies is increasingly important, leading to issues associated with scalability and globalization and the underpinning standards needed to support interoperability" (p. 120)
Surveillance	"There is increasing concern about potential infringements on individuals which the infiltration of technological applications make possible" (p. 120)

to support interaction; however, the intersection between technology and pedagogical principles is important. Hence the call to rethink our teaching and learning strategies in order to achieve interactive-oriented learning.

In South Africa, the COVID-19 pandemic has made visible the inequalities in tertiary education as HEIs transition to remote teaching and online learning. It became clear that the road ahead for these institutions was filled with challenges, especially in ensuring that there were no students left behind. Naturally, the modern learning environment comprises of a lecturer and students, who all participate in classroom discourse. In order to create a meaningful learning experience for the students, the lecturer has the task of understanding the different types of students that coexist in the classroom in order to ensure that each learner not only participates in the learning process, but also finds it enriching. With the prevalence of digital technologies and devices, augmenting interactivity in the classroom is now a reality and has the potential to improve the overall effectiveness of remote teaching and online learning. However, lecturers and students faced significant challenges such as technology abilities, spotty access to the internet and unstable living environments. In addition, lecturers needed to develop capacity

to maximise technologies and to choose appropriate mixes of interaction supported by digital learning platforms at their disposal. From our experience, it became clear that in order to achieve inclusivity in tertiary education, considerable attention to ICT in this transition must be given to understand the interplay between digital technological capabilities, technological affordances and pedagogical affordances of digital technologies to augment virtual interactions resulting in learning happening. The National Digital Inclusion Alliance (2020) defines digital equity as:

> a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy.

The COVID-19 era coincided with the fifth generation of distance education which adopts and integrates digital interactive multimedia and internet-based access to digital learning resources (Lou et al., 2006). Wagner (1994) defines interaction as the "reciprocal events that require at least two objects and two actions" and further qualifies that "[i]nteractions occur when these objects and events mutually influence each other" (p. 8). Without wanting to go into the details of interactivity, we map out how digital technology affordances enable the four key principles for learning: autonomy, connectedness, diversity and openness (Downes, 2007, 2008, 2009, 2010; Siemens, 2006) and unpack the complementarity with Anderson's (2003) Interaction Equivalency Theorem. The intersection of digital technology affordances and Anderson's (2003) Interaction Equivalency Theorem is characterised by social constructivist-oriented practices whereby students are not only consumers, but creators of knowledge. However, this is disruptive to the incumbent instructional techniques where lecturers are central to knowledge production. Yet, Dolmans et al. (2005) premise that learning should be a "constructive, self-directed, collaborative and contextual process" (p. 732). Therefore, the fundamental question becomes: how are lecturers using ICT to achieve instructional equity and in the process, how do students experience meaningful multimodal remote learning and epistemic access?

In a largely lecturer-centric context, there is a need to explore the theoretical contours to teaching and learning, especially during a pandemic such as the COVID-19, wherein face-to-face teaching is impossible. Academic staff's "reluctance to abandon their existing pedagogy" and "concerns about disruption to established pedagogical approach" (Hennessy et al., 2005, p. 159) must be addressed through professional development activities that help them to understand that there is "reciprocal interaction between technology and pedagogical practices" (Mentis, 2008, p. 217). Given that technology has accelerated tremendously, it becomes critical for lecturers to develop digital fluency to enable greater engagement and ultimately create cognitive justice. Students have an information-age mindset therefore there must be parameters on the type of information they have access to and develop the necessary competences to analyse information. The instantaneous access to information puts HEIs at crossroads as it does not mean learning, thus students must develop rigorous analysis techniques to bridge their knowledge gap. This situation calls for new pedagogical approaches and institutional structures that support and promote quality learning, especially now that education is viewed as a major instrument to level inequalities and transform socio-economic status.

Meta-Analysis Approach

Through the *Three Generations of Distance Education Pedagogy* (Anderson & Dron, 2011) lens we gained insights into the dimensions of ICT pedagogical affordances and mapped them against the four key principles for learning: autonomy, connectedness, diversity and openness. Drawing from Vygotsky's (1978) theoretical foundation that social interaction plays a fundamental role in the development of cognition, we evaluated studies on technology affordances, principles of learning and pedagogy of personalisation to gain deeper insights on digital education. This journey began in 2017 and coincided with our focus on the intellectualisation of pedagogical integration of ICT in education and analysing technology capabilities and affordances to enhance education. However, our discussion swiftly moved to the

more complex and interesting research on creating a digital education ecosystem to achieve instructional equity, and this coincided with the COVID-19 pandemic. Our interest in the intellectualisation of pedagogical integration of ICT in education and systematising ICT integration in schools led us to the meta-analysis with the aim of discovering novel dimensions of digital education and online learning. Our aim was not to present conclusive answers but to open up the debate on digital technologies and learning platforms by studying and interpreting empirical studies published in peer-reviewed academic journals with a specific focus on ICT integration and pedagogical affordances. These studies were reviewed, analysed and coded through a qualitative content analysis approach to provide insights into how ICT affordances suit a diverse range of learners and their intersection with the four key principles for learning: autonomy, connectedness, diversity and openness.

Principles Underpinning Pedagogy of Personalisation

> Psychologists use the term personality, referring to the unique and relatively enduring set of behaviors, feelings, thoughts, and motives that characterize an individual…personality is what distinguishes us from one another and makes us unique… personality is relatively enduring, or consistent. (Feist, 2010, p. 114)

According to McLoughlin and Lee (2007) learning occurs "in a sociocultural system in which learners use various tools and multiple forms of interaction to create collective activity" (p. 667). Drawing on Vygotsky's (1978) emphasis on the ability to learn through dialogue and interaction, we unpack the pedagogy of personalisation and the choice it affords students. Table 2.2 illustrates the interplay between technological affordances and the principles of learning, as viewed by Downes and Siemens, that learning starts with connection. In this chapter we acknowledge the complexity of human beings, as outlined in McCombs (2000), thus we looked at the networked learning principles away from the traditional

instructional processes and power structures. Technology affordances suit a diverse range of learners that coexists in a classroom to unlock learning in many ways including access to distributed knowledge (Dlamini & Ndzinisa, 2020). However, Mbati and Minnaar (2015) ascertained that "the use of technology for learning purposes requires content specialization as well as grounding in pedagogy" (p. 273). Educators, in our case lecturers, are expected to stimulate constructivist learning through social interactions (Mbati & Minnaar, 2015). Thus, in contrast with the traditional approach to education, students share in the responsibility of their learning through active participation, exploring learning resources and actively constructing knowledge.

Table 2.2 Principles of learning aligned with technology affordances

Principles of learning (Tschofen & Mackness, 2012)	Technology properties (Tschofen & Mackness, 2012)	Interactions (Anderson & Dron, 2011; Moore, 1989)
Autonomy "concepts of choice, control, and independence" (p. 128)	Self-Regulated Actively Constructing Knowledge Exploring through Research Creativity	Learner–Content
Connectedness "interactivity as a connectivist principle" (p. 131)	Collaborative Reciprocal Participation Ubiquitous Interactivity Synchronous Asynchronous Distributed	Learner–Content Learner–Instructor Learner–Learner
Diversity "differences among learners" (p. 134)	Multimodal Content Presentation Multiple Forms of Support Creativity Distributed	Learner–Content
Openness "sharing resources, ideas and expertise, and communicating and creating new information and insights through networks" (p. 136)	Collaborative Interactivity Synchronous Asynchronous Exploration	Learner–Instructor Learner–Learner

In order to achieve the objectives of ERT and online learning, the approach to education must change to ensure that students are not only participating to obtain credentials as means to unlock prosperous employment opportunities but are participating to also develop cognitively. Hence Table 2.2 is important in the development of professional activities to enrich the students' learning experiences. Invisible structural deficits in the transition to ERT and online learning must be dealt with to ensure that digital learning platforms provide a meaningful avenue for Moore's (1989) three-part model of interaction (learner–content, learner–instructor and learner–learner) to be realised towards achieving interactive-oriented learning. This interactivity has the potential to engender meaningful participation and to contribute towards building communities of inquiry. Scaffolding throughout the process is important to help students connect with concepts and compliment each other's contributions. For us, prioritising access to education is not negotiable, thus we advocate for alignment between the principles of learning and technology properties to achieve multilevel interaction and engagement between students and the subject content.

Digital Competences for Teaching and Learning in Technology-Integrated Contexts

There are certain sets of demonstrable knowledge, skills and attitudes that teachers and learners alike need to possess to be able to fully engage with the ever-evolving technologies that are part of the modern learning environment. Termed *digital competences* (Janssen et al., 2013), Blayone (2018) advocates that these sets of know-hows relate to the "purposeful and effective use of digital technologies" (p. 431). Although the digital competences field is itself still relatively new and active with the ongoing debate in an attempt to arrive at a widely accepted definition (see for instance Ala-Mutka, 2011; Falloon, 2020; Ilomäki et al., 2011; Janssen et al., 2013), it is general consensus that "digital competence is underpinned by digital literacy" (Spante et al., 2018, p. 2).

Through a collaborative effort involving a number of industry experts, Janssen et al. (2013) identified a set of twelve digital competence areas that are applicable to different aspects of life, including teaching and learning. Table 2.3 lists and describes these digital competence areas.

Janssen et al. (2013) state that these competence areas are an amalgamation of those concerned with direct or primary use of digital technologies (for instance: general knowledge and functional skills; use in everyday life; specialised and advanced competence for work and creative expression; technology mediated communication and collaboration; information processing and management; learning about and with digital technologies; informed decisions on appropriate digital technologies and seamless use demonstrating self-efficacy) with those generally thought of as supportive (for instance: privacy and security; legal and ethical aspects; balanced attitude towards technology; and understanding and awareness of role of ICT in society). This amalgamation recognises that pure digital skills and knowledge are only part of what is necessary in order to realise the interactions at play during the teaching and learning processes, in pursuit of instructional equity and cognitive justice. The importance of these competence areas cannot be overstated. Collectively, they form the basis upon which a connective knowledge network (Downes, 2008) can prosper.

Table 2.3 Twelve digital competence areas

Digital competence area	Description *The digitally competent person…*
General knowledge and functional skills	knows the basics (terminology, navigation, functionality) of digital devices and can use them for elementary purposes
Use in everyday life	is able to integrate technologies into the activities of everyday life
Specialised and advanced competence for work and creative expression	is able to use ICT to express his/her creativity and to improve his/her professional performance
Technology-mediated communication and collaboration	is able to connect, share, communicate and collaborate with others effectively in digital environments
Information processing and management	uses technology to improve his/her ability to gather, organise, analyse and judge the relevance and purpose of digital information
Privacy and security	has the capacity to protect personal data and take appropriate security measures
Legal and ethical aspects	behaves appropriately and in a socially responsible way in digital environments, demonstrating awareness and knowledge of legal and ethical aspects on the use of ICT and digital content
Balanced attitude towards technology	demonstrates an informed, open-minded and balanced attitude towards Information Society and the use of digital technology; and is curious, aware of opportunities and new developments and is comfortable to explore and exploit them
Understanding and awareness of role of ICT in society	understands the broader context of use and development of information and communication technology
Learning about and with digital technologies	actively and constantly explores emerging technologies, integrates them in his/her environment and uses them for lifelong learning

(continued)

Table 2.3 (continued)

Digital competence area	Description *The digitally competent person…*
Informed decisions on appropriate digital technologies	is aware of most relevant or common technologies and is able to decide upon the most appropriate technology according to the purpose or need at hand
Seamless use demonstrating self-efficacy	confidently and creatively applies digital technologies to increase personal and professional effectiveness and efficiency

Source Adapted from Janssen et al. (2013, p. 477)

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3

Streaming Content Online and Supporting Initial Teacher Educators During Covid-19 Pandemic

Shumani Leonard Tshikota

Introduction

The outbreak of the COVID-19 pandemic in China in December 2019 caused panic and closure of HEIs and schools, and it resulted in over 14 million cases of infections and over 600,000 cases of mortality worldwide. Globally, around 63 million primary and secondary school teachers and 1.5 billion learners in 165 countries were affected by school closures (UNESCO, 2020a). In South Africa, the President, Mr Cyril Matamela Ramaphosa, made a statement on 15 March 2020 declaring the coronavirus pandemic a national disaster and announcing a package of extraordinary measures to combat this grave public health emergency (Presidency, 2020). In announcing the measures, the President of South Africa called for an extraordinary response to manage the disease, protect the people and reduce the impact of the virus on society and the

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economy. The measures limit contact between people who were infected and those who were not infected to minimise the spread of the virus by groups of people. In South Africa, 26 universities and 23,076 schools were closed, with over 12 million learners, 400,000 educators and over one million students staying at home without being able to continue with their studies.

The disruption of HEIs due to the spread of the COVID-19 pandemic resulted in a shift in the way teaching and learning was conducted. The shift was brought about by moving away from face-to-face contact teaching and learning to online instruction. The break caused teaching and learning to stop, even in HEIs that were using both face-to-face and online instruction. The outbreak of the COVID-19 pandemic had an influence on initial teacher education (ITE) development. Teacher education is a "training of community of competent teachers dedicated to providing education of high quality, with high quality levels of performance as well as ethical and professional standards of conduct" (DHET, 2006). Teacher-education development is tied up with a practice that takes place in schools, which is called teaching practice or work-integrated learning (WIL). Teacher education assists student teachers to "acquire knowledge about teaching methods and educational theory" before starting with practical training (Zanting et al., 2003). Teacher education is met with criticism because of the quality of education delivered, its outcome and its impact on the public (Cochran-Smith, 2004).

This chapter seeks to explore the issue of online streaming of content in South African HEIs during the pandemic. Online instruction became the only hope to continue with teaching and learning. The programmes involved are the BEd degree and PGCE programmes. These programmes have students who are in their final year of study. Looking at the BEd degree and PGCE programmes with FET methodology modules, the curriculum is composed of several first-semester modules that need to be completed before students can do teaching practice. Adding to these modules is the *Educational Teaching Practice* module, which must also be completed before the students can commence with teaching-practice training.

I am cautious of the fact that the transition of some of the teachers from the traditional face-to-face form of teaching, which is contact, to online teaching and learning, which is distance learning, might pose serious problems. The other challenge that might come because of the shift to online teaching is the issue of policy, which will affect both teachers and learners. Again, there is an issue that will affect the new curriculum of the B Ed degree and PGCE programmes if it does not offer an interface for using technology to deliver the content online.

This chapter will also reflect on my experience of teaching using learner management systems (LMSs) for e-learning, such as Google Classroom, WhatsApp and Facebook for delivery of content. It will also reflect on studies done during the outbreak of previous pandemics; the assumption is that interrogating past experience of conducting teacher education during pandemics will assist in developing guidelines to conduct online instruction during the current pandemic.

This study should respond to the challenge of the disruption of learning because of the outbreak of the pandemic and the sudden closure of institutions. It is necessary to conduct this study especially as most of the participating students are from deep rural areas characterised by shortages of electricity, internet access and devices, water, food, and health services. The shift to online streaming of content creates the challenge of epistemic injustice to most rural students studying at the University of Venda.

Background and Context

The declaration of Coronavirus as a global pandemic (Wang & Brady, 2020; WHO, 2020), the disruption it caused to teaching and learning, and assessment (UNESCO, 2020b), had a bearing on ITEs as HEIs and schools were closed. The disruption deprived ITEs of opportunities for learning, growth and development. The level of difficulty was higher for parents with limited education and resources and were unprepared for their children to be involved in online streaming of learning content.

Despite the fact that most HEIs were engaged in online learning, streaming content online to ITEs became a challenge. The availability

of LMSs in HEIs did not bring face-to-face teaching and learning experiences into online streaming. It is difficult to understand why the disruption caused several unprecedented challenges, as most of these institutions, if not all of them, have already been engaged in online learning. Was it because both teachers and ITE students were unable to cross the technological boundary or because institutions were not ready to stream learning online? Most of these institutions, if not all of them, have been engaged in online learning and were using online LMSs, such as Blackboard, Moodle, efundi, Vula, MyUnisa and Ikamva to deposit learning content and for doing assessments. Was it because the transition to distance learning posed a challenge, confusion and stress for teachers and students? (Table 3.1).

Is the onus of going online to support teacher education on HEIs, teachers or students? Is it on learning spaces, learning devices or other technological tools? What about the curriculum taught at HEIs? Can it be applied easily in online instruction? Streaming content live in an online LMSs is affected by efficiency in both students and teachers, devices and tools used and the content to be streamed. Online streaming of content is a pedagogical strategy and does expose the issue of inequality in HEIs. And affects the way knowledge is transmitted, compromising the issue of epistemic justice as only NSFAS students can afford to get devices such as laptops and can afford money to purchase internet data. In addition, the issue of the environment did not only affect students, but staff were also affected by remote teaching and learning.

Methodology

This study has a focus on the human consciousness of the surrounding worldview, making the work phenomenological in nature. The study followed an interpretivist approach as it seeks to discover the reasons why HEIs were abruptly affected by the pandemic such that they could not continue online with teaching and learning. To know how to predict what happened, the study engaged in empirical research collecting data from the social, physical and technological worlds. Both qualitative and

Table 3.1 Online learner management systems

LMS	University	Web address
Blackboard	Cape Peninsula University of Technology	https://myclassroom.cput.ac.za/
Blackboard	Central University of Technology	https://ethuto.cut.ac.za/#
Moodle	Durban University of Technology	https://tlzprod.dut.ac.za/login/index.php
Blackboard	Mangosuthu University of Technology	https://mutelearn.mut.ac.za/
Moodle	Nelson Mandela University	https://learn.mandela.ac.za/
eFundi (Sakai)	North-West University	http://www.nwu.ac.za/it/news/moving-forward-efundi
Moodle	Rhodes University	http://www.rs.ru.ac.za
Blackboard	Sefako Makgato Health Sciences University	https://www.smu.ac.za/stss/blackboard/
Moodle	Sol Plaatje University	http://learn.spu.ac.za.dedi531.jnb3.host-h.net/login/index.php
Blackboard	Tshwane University of Technology	https://mytutor.tut.ac.za/
Vula (Sakai)	University of Cape Town	http://www.health.uct.ac.za/event/blackboard-learning-analytics-demo
Blackboard	University of Fort Hare	https://learn.ufh.ac.za/
Blackboard	University of the Free State	http://www.learning.ufs.ac.za
Blackboard	University of Johannesburg	https://uj.blackboard.com/
Moodle	University of KwaZulu-Natal	https://moodle.ukzn.ac.za/
Blackboard	University of Limpopo	https://tmlearn.ul.ac.za/
Moodle	University of Mpumalanga	http://www.ump.ac.za/Teaching-and-Learning/Access-with-Success.aspx
Blackboard	University of Pretoria	https://clickup.up.ac.za/
MyUnisa/JRooter	University of South Africa	https://www.unisa.ac.za/sites/myunisa/default/
Moodle	Stellenbosch University	https://sso.sun.ac.za/
Blackboard	University of Venda	https://www.univen.ac.za/blackboard/
IKamva (Sakai)	University of the Western Cape	https://ikamva.uwc.ac.za
Moodle/Sakai	University of the Witwatersrand	https://www.wits.ac.za/wits-e/
Moodle	University of Zululand	https://learn.unizulu.ac.za/

(continued)

Table 3.1 (continued)

LMS	University	Web address
Blackboard	Vaal University of Technology	https://www.vut.ac.za/e-learning/
Blackboard	Walter Sisulu University	https://blackboard.wsu.ac.za/

quantitative data were collected. A questionnaire was administered to students who are doing the *Educational Teaching Practice* (ETP) module, a fourth year, first-semester module. This was done to get an understanding of what students are experiencing as challenges for online learning. The online questionnaire was comprised of closed questions and was administered during the first semester to 189 students. Some of the standard questions used in the questionnaire include the following:

- Do you have an internet connection where you stay?
- How much data do you buy per week?
- Who gives you money to buy data?
- Do you have any problems with online teaching?
- How do you feel about being taught via online platforms, such as Blackboard, Google Classroom and WhatsApp?
- Can you indicate your preferred online platforms?
- Which platforms can you use?
- Do you have a smartphone?
- Which email do you use?

The qualitative data was evaluated to get an understanding of how online instruction was conducted during past pandemics. Quantitative data collected by the questionnaires were triangulated with qualitative data to build themes in the study. As already indicated, interventions were made in three modules. First, in the *Educational Teaching Practice (ETP4521)* module and then in the two methodology modules. All three modules are critical in teacher education, especially for initial teacher educators. The intervention involves the use of online tools. In all the modules, technology was used to deliver the learning content online, including the staging of tasks and assessments, but without live streaming.

Table 3.2 Data for live streaming of content

Category Frequency	Students 189
250 MB	42
500 MB	38
1 GB	109

Data Presentation and Analysis

Identified Issues for Streaming Online to Support Initial Teacher Educators

Several issues emerged from data collected by the questionnaires and document analysis regarding the live streaming of learning and teaching content. The identified issues concerned the cost of data, the use of emails, internet connections, online platforms and the affordance of smart devices.

Cost of Data

It was found that for most initial teacher educators to stream online effectively, they needed not less than 1 GB of data per week for connecting to the internet. Most of these students get money to purchase data from a bursary or NSFAS loan scheme, or from their parents. Now the cost of data dictates how poor students engage in teaching and learning. To the poor ITE students the absence of data means no connection to live streaming and propagates discrimination on the issue of equity (Table 3.2).

Emails

The study also established that most of the students had Gmail accounts. The preference for Gmail accounts was not seen as a setback but an advantage, as students will be able to communicate with their lecturers even when the university email system is not working. Most of the

Table 3.3 Email issue

Category	Students
Frequency	189
Gmail	184
Yahoo	0
Mvula	1
Other	4

students were introduced to their email accounts by their colleagues or friends, and this was a good sign of collaborative learning on an online platform. Most students can create their own email accounts. The availability of individual Gmail accounts will assist teachers when they want to send links to students in case they want to stream live classes. However, the setback happens when teachers insist on using official university email accounts, against the preference of ITE students (Table 3.3).

Internet Connection

Most of the students were found to have an internet connection where they stayedd or live. The advantage of this is that they can access online instruction 24/7 with no glitches or hitches. Wellman et al. (2003) state that the internet provides social affordances through bandwidth and connectivity for data transfer and messaging. With an internet connection, students are in a position to receive live-streaming content from teachers. The only challenge is that streaming of content usually carries heavy files that are large and expensive to download. Usually the internet connection cuts in and out which is a challenge when students are handling big files which can expire if not downloaded within 30 days (Table 3.4).

Online Platforms

Most of the students were found to be happily interacting with online platforms, such as Blackboard, WhatsApp, Google Classroom, Facebook and email. Engaging with online platforms is a good sign for students

Table 3.4 Internet connection issue

Category Frequency	Students 189
Yes	131
No	58
Maybe	0
No comment	0

Table 3.5 Online platform issues

Category Frequency	Students 189
Happy	131
Unhappy	58
Maybe	0
No comment	0

to connect online with teaching and learning platforms. The setback could be live streaming of content may happen when there are challenges of Eskom loading shedding, poor internet connection and students are without enough data (Table 3.5).

Smart Devices

Most of the students have smartphones but no tablets or laptops. Without these other devices, students are deprived of an opportunity to view and ask questions simultaneously when the teacher is presenting using Google slides in a virtual classroom or downloading any uploaded material in their own time. The concept of affordance explains people's relationship with technologies used for learning and teaching (Oliver, 2005), According to Bower and Sturman (2015), teachers and learners must be able to perceive the use of online learning spaces and devices to make them of educational benefit. The pedagogical benefits of devices are that they provide both teachers and learners with lived experiences, recordings and opportunities for simulation and communication. But still, they can present issues relating to students cheating, cost and some ethical challenges (Table 3.6).

Table 3.6 Smart devices issues

Category Frequency	Students 189
Laptop	0
Smartphone	171
Desktop	0
No	18

Identified Barriers for Live Streaming Content to Support Initial Teacher Educators

Most studies have found several challenges regarding e-learning platforms, which should be taken care of before embarking on e-learning activities, especially the ones that involve live streaming. Live streaming of content cannot take place in an environment where there is poor internet access, how the curriculum is designed, human resources capacity, limited infrastructure and low level of computer literacy (Table 3.7).

Table 3.7 Challenges of e-learning platform issues

Authors	Challenges
Ssekakubo et al. (2011)	Poor access to internet, knowledge gap in e-learning users, low confident levels in users, user abilities of LMSs
Ndukuba et al. (2015)	Institutional support, capability of human resources, curriculum/content design and management system
Bagarukayo and Kalema (2015) *citing* Mlitwa and Van Belle (2012)	Limited infrastructure capacity, network capacity, technology instability, resistance to change, access issues, literacy limitations
Bagarukayo and Kalema (2015) *citing* Isabirye and Dlodlo (2014)	No e-learning culture, instructor attitude, lack of pedagogical strategies, cost, and quality, under preparedness
Bagarukayo and Kalema (2015) *citing* OERAfrica (2014)	Weak ICT skills, lack of resources, low computer and internet access

Data from the questionnaires revealed that some of the students have serious challenges with online platforms. But the frustration of using ICT or online lessons is brought about by challenges relating to internet connection, data cost and available compatible devices.

According to Ssekakubo et al. (2011), LMSs such as *Moodle*, *WebCT*, *Sakai (Vula)* used by the University of Cape Town had data migration difficulties and created frustration among the user communities. The failure of these LMSs presents challenges on the live streaming of teaching and learning content. Blackboard LMS is often used to create and upload teaching and learning content which can be accessed offline (Table 3.8).

In the past pandemics, the outbreak of the coronavirus in Hong Kong in 2003, kept students at home, and teachers had to contact them via email to provide new and different opportunities to work through curriculum requirements (Fox, 2007). Teachers adopted blended learning, where they switched from face-to-face teaching to using distance education, internet, phone and ordinary post. Now the challenge was teachers were uncomfortably teaching children outside the classroom environment where they could not see whether they were wide awake or fast asleep (Fox, 2007). Most of the learners used their parents' emails to send messages, without writing their own names in the messages, others used their parents' email addresses and teachers' messages could be read and deleted by the parents even before students could read them. The teachers ended up not knowing who was corresponding with them, as most messages with tasks to be completed bounced back. Learners themselves felt bored by the isolation. Other teachers avoided responding to student electronic messages, leading to some problems for students who expected prompt replies to their emails. These challenges could have been avoided by live streaming the content, allowing both teachers and learners to transform teaching and learning by integrating technology into the learning space (Blewett, 2018). Kirschner's study (2015) Facebook as learning platform: Argumentation superhighway or dead-end street? Said that there is a long road to travel before Facebook can be effectively and efficiently used as a tool for knowledge construction and knowledge creation, the reason being that it is not fit to do what is expected to do. Some of the challenges

Table 3.8 Universities and LMS issues

University	LMS	Challenges
Makerere University	Blackboard, Kewl and Moodle	Blackboard did not meet much success beyond having some staff trained to create and upload e-learning content, high licence fees. Kewl, being open source, provided hope for sustainability, but less than two years later, with very little success. Moodle yet to be utilised to its potential
University of Nairobi	Wedusoft, Chisimba and Claroline	Wedusoft developed inhouse, Chisimba through collaboration and now only 10 lecturers are using Claroline
University of Zambia	Moodle and Cmap	Left Moodle in favour of Cmap, which is only used by science lecturers
Nelson Mandela University	Sharepoint and Moodle	Moodle accepted as LMS of choice but may not be the ultimate answer
University of Cape Town	Moodle, WebCT, Sakai (Vula)	The turnover of LMSs has been because of usability issues, but the turnover has had data migration difficulties and created frustration among the user communities

Adapted from Ssekakubo et al. (2011)

affecting Facebook deal with cyber and real identities (Blewett, 2016), and the handling of the Facebook page in delivery of the learning content (Blewett, Activated teaching—Join the classroom revolution, 2018).

Identified Best Practices for Live-Streaming Content to Support Teaching and Learning

After having gone through all the issues identified in the data collected by the questionnaires and document analysis, there are four things that need to be taken care of to successfully launch live-streaming content during the time of COVID-19 pandemic. These are a stable internet connection, an easy-to-use learning management system, learning content that is easy and user friendly in the identified learning management system and a device that is generally compatible with most software and which can be handled by most users or any basic user of online instruction.

Findings and Discussion

The study found that live streaming of content in the COVID-19 era has serious challenges for both staff and students. Staff and students need data to connect to the internet to stream, and to upload or download learning materials. However students without sponsors suffer the most as they cannot afford to purchase the 4 GB of data needed every month to access online instruction. An internet connection was found to be important as it enables students to access online instruction. Though most of the students were found to have an internet connection where they stay, the few who do not have connectivity is worrying as it affects the issues of equity and epistemic justice in teaching and learning. The other challenge is how students were found to be interacting with online platforms such as Blackboard, Moodle, Google Classroom and Facebook.

Communication between staff and students is easy, due to the availability of emails, but communication can be difficult in learning and teaching due to the unaffordability of smart devices such as tablets and laptops, especially when there are students who cannot afford compatible devices.

Conclusions, Implications and Recommendations

The closure of HEIs due to the outbreak of the COVID-19 pandemic exposed their lack of readiness to go online to offer teaching and learning content. It was not necessary to sound a call for both students and lecturers to turn to online instruction. The attempts made to see how institutions could support the needy with data and laptops and with printed materials were not necessary, given the fact that there was never a switch to live-streaming teaching and learning. All institutions have, or have used, learner management systems for five or more years, but teachers still struggle to use Microsoft Teams and Zooms to stream live content to ITEs. The study revealed what could have been the challenge for poor live streaming of content to students. The challenge could have been the result of pending issues about data cost, poor connectivity, user-friendliness of online tools and lack of institutional support before the outbreak of the pandemic. Unless HEIs invest more resources in online instruction, future crises will continue to affect teaching and learning adversely, and the issue of equity and emphatic justice in teaching and learning will be compromised.

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4

The Imperatives for Disadvantaged Students Support in HE in the COVID-19 and Post-COVID-19 Era

Alfred Masinire and Zvisinei Moyo

Introduction

Historically, Higher Education (HE) in South Africa and other countries in Africa has been a preserve for the elite. With the establishment of democratic institution, previously disenfranchised and disadvantaged students, mainly blacks entered the Higher Education (HE) space. What became evident was the enormous amount of barriers to access, participation and achievement, which these students had to contend with during their day-to-day experiences in HE. Structures were established to

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support and mitigate the challenges the disadvantaged students encountered. It is within this context that COVID-19 struck, disrupting a whole range of normal life and bringing in a new normal. While we acknowledge the urgent response of HE to the COVID-19 crisis to ensure that the academic project is sustained, we argue that the responses were too broad and thus failed to adequately deal with the particular needs of disadvantaged students. This chapter has four aims, (a) to describe the support structures that existed for disadvantaged students before COVID-19; (b) to ascertain the level of disruption that has occurred to the existing support structures for disadvantaged students in HE during the current COVID-19 pandemic; (c) to outline the new challenges which emerged as a result of for disadvantaged students in HE and (d) describe support structures that have been created as well as propose interventions that still need to be established to ameliorate the hardships disadvantaged students are currently facing as a result of COVID-19 pandemic. This chapter draws data from the Universities South Africa 17 April to 06 May 2020 Engagement and Research Report capturing the engagement that universities have had with government and other organisations in their fight against the unprecedented COVID-19 pandemic and an emergency remote teaching and learning during COVID-19 context.

"Historically Disadvantaged Individual" (HDI) is defined as a South African citizen—who, due to the apartheid policy that was in place, had no voting rights in the national elections prior to the introduction of the Constitution of the Republic of South Africa, 1993 (Act No. 200 of 1993). While this speaks to political rights to vote, the apartheid policy stripped these individuals of their rights in every other sphere of life including education. In HE transformation also meant attending to the needs of disadvantaged students who essentially are Black South Africans. In this chapter, we adopt the term disadvantaged students to refer to those black students who were previously marginalised and excluded by apartheid legislation.

A Historical Account of HE and the Place of Black/Disadvantaged Students

The mandate of Higher Education within the context of South Africa as set out in the White Paper on Higher Education (2013) identifies key four purposes of Higher Education:

- Provide high skills for the labour market
- Knowledge hubs to address national problems
- Position South Africa as a competitor with post-industrial states
- Create equitable conditions to reverse the effects of apartheid.

The aspirations in the white paper on Higher Education (2013) above, are based on an understanding of democratic principles of equality and assumptions of a level playing field for both staff and students in HE. However, this is rarely the case. Within the context of HE, particularly in the historically white university, black students are defined as marginalised and disadvantaged (Hlatshwayo & Fomunyam, 2019). According to Luckett (2016), the cultural conditioning of the postcolonial university and the contradictions it sets up for black students access into higher education is predicated on positions of extreme inequality in terms of race, school background, class and financial and other resources (Chetty & Pather, 2015). The story of black students in higher education in the South like many other postcolonial states has always been a narrative of disadvantage. Access and participation were widened after 1994 as a political gesture to allow the previously excluded Black students especially in the historically white universities. According to Chetty and Pather (2015), "policies of widening access to higher education have led to increased number of students who enter into the institutions from poor and disadvantaged backgrounds without the cultural capital deemed necessary for success" (p. 1). Because of this lack of cultural capital some of the disadvantaged students drop out while those who remain continue to face a myriad of challenges which makes life and study unbearable.

There are significant barriers that make it impossible for some students especially those from disadvantaged backgrounds to participate equally

and productively in the realisation of higher education goals. Notable challenges are academic skills and knowledge gaps, social dislocation; challenges of adapting to new university and urban life and cultural shock which prevent Black students from entering and or succeeding in higher education. Given the above constraining conditions for disadvantaged students, academic development programmes have been put in place to cushion them. Thus, long before COVID-19, the imperatives for disadvantaged student support in HE have been recognised. How much of this support was pushed forward during and after COVID-19? What new forms of support became necessary for disadvantaged students? Did COVID-19 create a new category of disadvantage? In this chapter we wrestle with these questions, drawing attention to the challenges of online teaching and learning during the COVID-19 era.

Pre-COVID-19 Support for Disadvantaged Students

Hlatshwayo and Fomunyam (2019) identify three distinct phases in conceptualising academic development. The first phase, pre-1994 was characterised by a deficit conception of disadvantaged black students who lacked literary skills, technical skills and social skills required to succeed in HE (Mckenna, 2004). The focus here was the student who was deemed underprepared for university studies as a result of the deficiencies in his academic background. The second phase focused on developing appropriate teaching and learning resources and curricular development to meet the needs of disadvantaged students. The last phase focused on developing social support structures and systems. The above interventions were designed to enable disadvantaged students to fully participate and achieve in academic university life.

The rate and terms on which disadvantaged students were incorporated into higher education was deemed unsatisfactory and slow from the point of view of these students. The unprecedented RhodesMustFall which started at University of Cape Town in 2015, escalating in all universities into the FeesMustFall were momentous and critical movements that altered the character of university transformation. Driven

by the mantra of decolonisation—the students called for a decolonised curriculum that was cognisant of the lived realities of the disadvantaged students. They also called for the removal of colonial artefacts which still lingered in university corridors such as Rhodes's statue. While the comparison between the AD above and the students call for decolonisation bear little in common, they both aimed to bring disadvantaged students to the centre of university life, albeit, through different means.

Despite these interventions, Hlatshwayo and Fomunyam (2019) note that disadvantaged students' needs are complex and cannot be addressed adequately and wholly through such programmes. In this chapter, we argue that at the onset of COVID-19 disadvantaged students were already overloaded with persistent challenges. The prevailing past and current AD measures were already missing some of the disadvantaged students as reflected in the skewed racial throughput statistics and high dropout rates. We raise two critical concerns which have a significant bearing on the experience and academic welfare of disadvantaged students. The first is what becomes of traditional support measures in the context of COVID-19? Secondly, what new support structures were put in place to cater for disadvantaged students? The reopening of universities after the initial closer, through the Emergency Remote Teaching and Learning (ERTL) signalled a completely complex teaching–learning space in Higher Education. The academic landscape morphed drastically. The question remains, thus, how were originally disadvantaged students catered for? Was there dedicated support for disadvantaged students? How were they impacted by the new learning space?

We note a general thrust to "save the academic year" which steered ERTL as one particular move that did not sufficiently reach out to some of those disadvantaged learners. Thus we argue that the COVID-19 pandemic and the teaching and learning environment it entailed in some way compounded the already stretched support structures for disadvantaged students. We conclude by suggesting how best the disadvantaged students might be accommodated in the current context of COVID-19 so that they at least partake in the ERTL environment.

Methodology

This chapter adopts desktop analysis with careful consideration as to the quality of the nature of the data source. In order to create an effective and rigorous status update for South African universities, it is important that we try to utilise dependable sources given the fluctuation of information regarding COVID-19. For transparency, we utilised Universities South Africa 17 April to 06 May 2020 Engagement and Research Report capturing the engagement that universities have had with the government and other organisations in their fight against this unprecedented pandemic and an emergency teaching and learning during COVID-19 era report. To accept that we evaluated across the entire country, we attempted to achieve a rough equality of all the twenty-six public universities. Patterns of emerging issues were identified for interpretation and reduced into disenable themes for discussion.

COVID-19 and the Destabilisation of Higher Education

The COVID-19 pandemic has seriously influenced social, financial and political scenes and specifically the HE instructive framework. The destabilisation is especially clear in South African HE establishments that have been going through change from the traditions of politically sanctioned racial segregation. Consequently, the unavoidable deserting of the physical and social university climate has had significant effects on students, raising issues around standard and self-restraint, mental/actual prosperity, study inspiration and sensations of detachment. While the concerns prompted by ERTL could apply to all students, their impact on disadvantaged students is still a matter of conjecture. We hold that the concerns were worse, given their already marginal position in the HE space long before COVID-19.

This without a doubt has had implications on university funds, the methods of instructing and learning just as student support. Surely, the utilisation of innovative apparatuses or monetary difficulties in HE is not new, rather the meaning of change of the whole university experienced

to digitisation merits consideration. This is especially the situation when in any case grounded understudies support administrations, for instance identifying with scholarly, social and emotional wellness support are for the most part either incidentally shut or changed into less customised types of online administrations as pointed beneath.

Disruption of All Educational Activities

The outbreak of COVID-19 compelled lockdown in every sector including education. The establishments shut with the stop of instructive exercises and created numerous difficulties for the stakeholders (Pravat, 2020b). Along these lines, the different exercises like confirmation, assessments and entrance tests, led by different higher education institutions were deferred. The essential test was to continue the teaching and learning process when students, faculties and staff could no longer be physically present on the campuses. The obvious answer for the institutions was to depend on web-based instructing learning. In any case, inside a moderately brief timeframe, higher education institutions (HEIs) have had the option to offer help to students through online modes. COVID-19 has sped up the appropriation of computerised advances to deliver education. It stimulated all teachers and students to become more technology savvy.

The HEIs have begun leading orientation programmes, induction meetings and counselling classes with the assistance of various e-conferencing instruments like Microsoft Teams, Skype, Zoom, Email, WhatsApp, Google Drive and others to provide support services to the students (Pravat, 2020a). This activity has been taken to establish a powerful virtual climate of showing learning and to make inspiration among understudies for online exercises. The educators and understudies improved the utilisation of electronic media for sharing data by utilising WhatsApp, Google Drive, Message, Twitter, Email and others (Pravat, 2020a). They have been offering significant archives to the group members and creating online local repositories. Students have been instructed to scan the examination answer scripts to the institutions through email. Institutions started receiving, for instance, internship

reports and projects through email during the lockdown for COVID-19. The above teaching and learning climate assumes the availability of technologies and complimentary resources such as data, electricity as well as technical skills for both staff and students. But to assume the same resources existed for students in the deep end of Western Cape or KwaMhlanga in Mpumalanga would be an overstatement. Already, the ERTL infrastructure and technical support required were well beyond the reach of many disadvantaged students, particularly those who could not be accommodated in university residences.

Broad Scope of Interventions in Higher Education to Support All Students

COVID-19 created numerous difficulties. The HEIs have reacted emphatically and adopted different systems to confront the emergency during the pandemic. The government of South Africa has likewise taken a number of preventive measures to prevent the spread of the pandemic COVID-19. During the lockdown, students are utilising mainstream online media devices like WhatsApp, Zoom, Google meet, Youtube live, Facebook live and so on for internet teaching learning framework. In this section, we use two tables to present summaries of the reports compiled from inputs received directly from public universities from 17 April to 6 May 2020. Table 4.1 presents information for 18 universities and Table 4.2 presents information for the 8 formerly disadvantaged public universities. The Universities South Africa (USAf) (2020) report narrates the twenty-six public universities' interventions to migrate to online teaching and learning modes. The information in Tables 4.1 and 4.2 is further analysed using the strategies; online learning, student infrastructure support and psych-social support.

Table 4.1 Interventions of 18 public universities to support all students

Institution	Readiness for emergency online teaching and learning as at 6 May 2020
Cape Peninsula University of Technology	Lack of suitable gadgets Issues of network Vast majority of CPUT students are from rural settlements of the Eastern Cape, some with no power and absolutely no internet connectivity
Central University of Technology	Online instruction resumed from 20 April 2020 CUT is giving around 5000 electronic gadgets to needy students, a package that incorporates provision of data options
Durban University of Technology	Not all students have gadgets or adequate connectivity To establish an acceptable level of service of internet connectivity to students prior to giving gadgets to the poor
Nelson Mandela University	Academic year resumed from 28 April 2020 through 2 pathways Pathway 1 students—with appropriate gadgets—laptops, smartphones and connectivity Pathway 2—with no access to gadgets or connectivity from home 45% do not have reasonable gadgets
North-West University	Online learning began on 20 April 2020 To deliver hard copy study material to students reporting unsatisfactory network access Contact teaching on campus to meet disadvantaged students halfway More than 7% either do not have internet connectivity or lack gadgets suitable for online learning Secured zero-rating to its institutional sites Providing gadgets to the needy students on a loan basis

(continued)

Table 4.1 (continued)

Institution	Readiness for emergency online teaching and learning as at 6 May 2020
Rhodes University	Online learning resumed on 20 April 2020. Some RU students do not have access to the appropriate devices and/or connectivity to participate fully through an online teaching and learning approach To secure zero-rated data from telecommunications companies
Sol Plaatje University	SPU was ready to resume online learning from 4 May 2020. Majority had laptops and 75% had satisfactory connectivity
Stellenbosch University	Rolled out online learning on 20 April 2020 SU changed the schedule for classes, tests and assessments receptive to the COVID-19 interruptions Some students did not have gadgets
Tshwane University of Technology	Not all have access to data, connectivity and devices required to participate fully in remote learning Finishing of Semester 1 resumed on 1 June to 28 August 2020 subject to convenient delivery of learning gadgets
University of Cape Town	Referral system to help students adapt Most advantaged understudies were not ideally ready for online learning Vulnerable students living in environments unconducive to learning
University of Johannesburg	Ready to commence teaching on 20 April 2020 Slow pace to ease students into online learning Given gadgets to new NSFAS students

Institution	Readiness for emergency online teaching and learning as at 6 May 2020
University of KwaZulu-Natal	Assessment protocols are expected to be in place by the end of May 2020 Biggest contact institution in South Africa, faces unique arrangement of difficulties of dealing with managing the academic programme in COVID-19 era
University of Mpumalanga	Utilising Moodle, online discussion forums, YouTube recordings, narrated PowerPoint videos and other technologies Extraordinarily helped by the zero-rating of UMP sites by phone suppliers Lacking appropriate learning gadgets, connectivity difficulties in their home areas Extra time and catch up classes
University of Pretoria	Online learning began on 4 May 2020 to accommodate the delivery of laptops to disadvantaged students Black students were by far the most disadvantaged when it came to appropriate study devices
University of South Africa	Orientation to the online delivery of teaching from 20 April Waiting for all students to get devices Students complained about online assignment submission
University of Free State	The University would not punish later starters UFS has their fair share of students without appropriate study devices

(continued)

Table 4.1 (continued)

Institution	Readiness for emergency online teaching and learning as at 6 May 2020
University of the Witwatersrand	Rolled out online from 20 April 2020 To accommodate their disadvantaged students through contact teaching at some point Purchased and distributed data to students 10% of Wits students lack devices, internet connectivity or data
Vaal University of Technology	To resume the academic programme remotely from 1 June 70% of student lack appropriate devices, and 80% face a challenge of data Negotiating with the state and funders to make up the shortfall of 15,000 tablets and laptops

Table 4.2 Interventions of 8 formerly disadvantaged public universities to support disadvantaged students

Institution	Readiness for emergency online teaching and learning as at 6 May 2020
Mangosuthu University of Technology	DHET will step in with some crisis help. Negotiating with telecoms providers for zero-rated access to the university site Challenges of students not in possession of gadgets and network accessibility MUT considered remote teaching to deal with finishing the academic year
Sefako Makgatho University of Health Sciences	60% of understudies were without gadgets at SMU SMU waiting zero-rated access deals To bring back to campus, students whose circumstances did not allow them to participate in remote learning
University of Fort Hare	Up to 70% do not have laptops Majority dwell in rural Eastern Cape, where they either had no electricity or had no access to internet connectivity Government and telecommunications provided gadgets and zero-rated data Connectivity remained a hindrance A ban has been put on all assessments To acquire 12,000 laptops with modems on a loan-to-buy basis, to be debited to the students' fee accounts
University of Limpopo	In a dilemma similar to that which other previously disadvantaged institutions faced No financial plan to provide gadgets Resuming teaching doubtful Students' lack of appropriate devices, no connectivity Impractical to re-start the academic programme online in these circumstances

(continued)

Table 4.2 (continued)

Institution	Readiness for emergency online teaching and learning as at 6 May 2020
University of Zululand	Teaching and learning continued online during the lockdown Unizulu secured zero-rated data and adopted less expensive technologies to facilitate remote learning External funding to procure laptops to be loaned to needy students No internet access from home. Access to data a challenge to those with satisfactory connectivity To deliver materials in hard copy and/or on USB to students without connectivity
University of Venda	Online learning resumed from the first week of April 2020 Had been distributing tablets to all registered students, in accordance with a project that started in 2015 Tablets for the first-time entering students for 2020 had not yet been distributed when the country went on lockdown, arrangements underway. Negotiated zero rated access to university sites Poor network connection, as is the integrity of online assessment and student readiness to participate in blended learning
Walter Sisulu University	Large number of students without devices 90% are without devices; internet connectivity and data

Online Teaching and Learning

Given the disruption of the HE programme, world migration to online teaching and learning was unavoidable. Fruitful execution of internet teaching and learning and making learning materials accessible require ready access to data. As shown in Table 4.1, all the twenty-six universities quickly moved to a fully online delivery model. The obvious and

immediate challenges that the students faced were lack of devices and connectivity. Many students even those in urban areas struggled with data access in order for them to fully participate in online learning (Faraj et al., 2021). Even though the learning programme was designed such that students could participate on their own time (asynchronous), students still experience connectivity challenges. Other students lived in rural areas where connectivity was sporadic or no internet access at all.

Online learning resumed on 20 April 2020 for CUT, UJ, RU, NWU, Unisa, Wits and Stellenbosch. Others have been lagging for instance, TUT and VUT planned to finish the first semester from 01 June to 28 August 2020 and UP began on 04 May 2020. Not all students had access to the appropriate devices and/or connectivity to participate fully through an online teaching and learning approach. MU, TUT, DUT, CUT, UKZN and CPUT to mention a few had the challenge of students lacking appropriate learning gadgets, and those facing connectivity difficulties in their home areas, the University has asked its funders and accomplices with requests to provide laptops to the students that they are funding. In support of online learning, institutions like NWU and CUT set up to deliver hard copy study material to students reporting unsatisfactory network access. Contact teaching was conducted on campus to meet disadvantaged students halfway.

Student Infrastructure Support

Lack of appropriate devices, connectivity and access to data were the major challenges. For instance, 45%—NMU, 70%—VUT and 90%—WSU did not have reasonable gadgets for online learning. Nelson Mandela University set up two pathways, that is, pathway one for students with appropriate gadgets: laptops, smartphones and connectivity. These began learning vigorously distantly and digitally. Pathway two is for those with no access to gadgets or connectivity from home who will receive serious face-to-face instruction when students return to campus. The two pathways empower the university to decrease numbers on campus for social and physical distancing purposes. RU, SPU, SMU, UFH, Unizulu, NWU, Univen, UMP and MUT obtained devices for

needy students, and to secure zero-rated data from telecommunications companies. These were loaned, for example, NWU, Unizulu or loan-to-buy, for example UFH. UJ gave gadgets to new NSFAS students only. Wits purchased and distributed data to students although about 10% of Wits students lack devices, internet connectivity or data. Stellenbosch changed the schedule for classes, tests and assessments receptive to the COVID-19 interruptions. UP resumed online teaching and learning on 4 May 2020 to accommodate delivery of laptops to disadvantaged students, thus allowing everyone a common restart date. Black students were by far the most disadvantaged when it came to appropriate study devices. Wits set up a programme for disadvantaged students through an alternative cohort of contact teaching at some point. Alongside the online teaching solution, VUT is working on a plan to return final-year undergraduate students to campus, in a staggered fashion.

Psycho-Social Support

Universities began to offer support to their students to ease adaptation to the new ways of learning. Nelson Mandela University created two pathways with the support of tutors, supplemental instruction leaders, academic advisors, student success coaches and counsellors, who will offer support online and, whenever the situation allows, face-to-face learning and psycho-social support to assist students with adjusting to new approaches for learning and to succeed. After recognising that online learning had made everybody vulnerable, the University of Capetown for instance began a referral system to help students adapt. The issue of vulnerable students went further than students without devices and connectivity. It also included students living in environments unconducive to learning. Even the better-resourced students had not signed up for online learning and were therefore anxious.

Likewise the University of Johannesburg slowed the pace to ease students into online learning. Universities put time and exertion into producing remote teaching, learning and research resources in support of their community and felt adequately prepared.

Other institutions like the University of KwaZulu-Natal put in place systems so that no students were left out due to lack of access to online services. For example, the places of residence of all enrolled students were geo-mapped to establish their location and to get a sense of the number of students located in areas with poor coverage. The University of Mpumalanga allowed extra time for assignment submission. Catch up classes will be arranged as necessary, once contact sessions resume.

Interventions Dedicated to Disadvantaged Students

Indeed, online teaching and learning was met with hurdles, for example, students who did not have gadgets as well as connectivity to take part completely in a web-based teaching and learning stage. As the world moves to web-based teaching and learning, the worldwide interest for appropriate devices and/or connectivity and so forth will, for the time being, make an extra obstacle of accessibility. Given the issues of inequality and poverty in our society, remote access to online learning materials might worsen already unequal opportunities. Universities cooperated with Universities South Africa to discover nuanced methods of resourcing students who are not advantaged to have the best network and suitable gadgets available to them.

Student Infrastructure Support

MUT, SMU, Unizulu and Univen started negotiations with telecoms providers for zero-rated access to the university site. UFH reconfigured spending plan to oblige the acquisition of 12,000 laptops with modems but suppliers currently out of stock, waiting for these devices to be manufactured. The University is, meanwhile, conducting an assessment to determine who gets the gadgets, on a loan-to-buy basis. This expense will be debited to the students' fee accounts. Unizulu secured external funding to procure laptops to be loaned out to needy students, providing

greater support to the vulnerable group of students. Participation levels were very low in some departments due to lack of laptops by students.

Given the challenges of students not in possession of gadgets and network accessibility, MUT had considered remote teaching to deal with finishing the academic year. In any case, the extended lockdown delivers the online choice inescapable. SMU's 60% of students were without devices. The university's priority would be to bring back to campus, students whose circumstances did not allow them to participate in remote learning. The University was developing a criteria to determine which students to prioritise in allowing some back on campus. Up to 70% of UFH do not have laptops. The vast majority of them dwell in rural Eastern Cape, where they either had no electricity or had no access to internet connectivity. Government and telecommunications provided gadgets and zero-rated data. However, connectivity remained a hindrance. While the University is committed, as other institutions, to finish the 2020 scholarly year The feasible strategy is to assume a blended learning approach combining remote learning, now, and contact teaching when it is safer to re-open campuses at the end of the lockdown. In the interim, learning materials keep on being transferred on Board for the individuals who can keep learning. A ban has been put on all assessments.

UL was in a dilemma similar to that which other previously disadvantaged institutions faced. The University did not have a financial plan to provide gadgets to most of their students. In the absence of a solution in this regard, resuming with teaching would without doubt leave some students behind. Students' lack of appropriate devices and issues of connectivity remained a stumbling block. It was impractical to re-start the academic programme online in these circumstances. Many students struggled to access internet from home, because their places did not have readily accessible connectivity. Buying data to access online teaching and learning also became a challenge to those with satisfactory connectivity. For WSU, the large number of students without devices makes online learning untenable at this point in time. A large majority (90%) of students are without devices; internet connectivity and data.

Psycho-Social Support

Higher education institutions put effort to cater for the prosperity of students (OECD, 2020). Students who may have lost their feeling of having a place within their institution can stay in contact for inclining, social exercises through online services. Nonappearance of social contact can altogether affect weak students, for instance, broken families, harmful families, child care, lacking housing and different instabilities. Thus when offering such types of assistance, specific consideration ought to be given to for example the sexual orientation measurement of the current emergency. It is beyond doubt that girls incur additional risks compared to boys during lockdown, which span from an increased burden in domestic duties, mental health, disparities and lack of access to sexual and reproductive care, greater risk of gender-based violence including sexual assault. All these factors may impact girls' well-being differently than for boys. Therefore, students may struggle to maintain a healthy social life without the occasions provided by the university life.

Unizulu set up arrangements are being made to deliver via courier or other means, teaching and learning materials in hard copy and/or on USB to students without connectivity. The University is collecting data to establish the extent of benefit derived from learning online so that catch up plans could be arranged for the vulnerable lot, so that no one remains unfairly disadvantaged. At Univen, teaching and learning resumed online, from the first week of April 2020. The University had been distributing tablets to all registered students, in accordance with a project that started in 2015.

Since then, the University had been allocating tablets to all first-time entering students. This has, over time, become a tradition, thus enabling students to participate in online learning, through use of Blackboard. Tablets for the first-time entering students for 2020 had not yet been distributed when the country went on lockdown. Arrangements are underway to deliver tablets to all first entering students' places of residence. The University has successfully negotiated with Telkom, Vocadom, Cell C and MTN for zero rated access to university sites. Like many other institutions, Univen has had to contend with unavailability of data for students (including international students), poor network

connection is also a real concern, as is the integrity of online assessment and student readiness to participate in blended learning. To undertake a survey to understand what percentage of students could not access online content, and the underlying reasons. To ensure that no student was left behind, the University was planning on supplementing e-learning with other teaching and learning approaches, including the delivery of hard copy learning materials to students.

Discussion

It is certain that students from disadvantaged backgrounds are the hardest hit. The South African government, similar to some other purported underdeveloped nations had launched support packages to address the socio-economic inequalities. While online modes of learning have become a common discourse, we argue that there is less attention given to the students' experience and in particular their specific needs of support considering the diverse socio-economic backgrounds. The pandemic has raised concerns about the implications of COVID-19 especially the possible long-term impacts on support on participation in South African universities. Disparities have widened and will keep on expanding regarding support available to disadvantaged students. Consequently, while insightful discussions have contended that online stages can offer expanded admittance to HE, they can likewise do not have the fundamental scholarly and prosperity support that disadvantaged students need and most likely be accessible via contact learning on campus.

The remote learning currently invoked in HE globally, is expected achieve the aims and objectives of universities and to have the option to contend worldwide. Despite what is generally expected, disadvantaged students have limited resources to sustain the online learning (Cristobal-Fransi et al., 2020). The USAf (2020) report further affirmed the finding of Omodan (2020) that the place of students having the necessary devices is necessary. Along these lines, the findings affirmed the reality on the need to revamp universities by challenging the circumstances around disadvantaged students. The distress from the well-intentioned

researchers, activists, and students on the need to transform HE cannot be considered separately from findings of this study. Disparities in the distribution of resources to the disadvantaged students remains one of the significant challenges. That is, the absence of social conveniences and infrastructure intended to support students from disadvantaged backgrounds.

This study discovers that the socio-economically disadvantaged remains a challenge thwarting the activities of HE online learning in South Africa. This finding further compliments the call to transform society in South Africa. The finding is confirmed the contention of Dube and Puleng (2020) that most of the rural areas are marginalised and exposed to poor and insufficient accessibility of social and sustainable conveniences. Subsequently, transformation of HE is basic to destroy power relations and imbalance in the distribution of public profits.

From the overall perception, experience, writing, and the information gathered, the spot of the internet of things and, as a rule, the innovation in HE cannot be underestimated. This is to say that technological innovation is pretty much as significant as the actual university.

Conclusion and Recommendations

From the above discussion, transforming HE from the direction of the possibility of unknown that influenced its proactive-ness towards an option to its normal operation is unavoidable. It can be concluded that students from more socially deprived homes found it more difficult to engage with the shift to more online delivery. As shown in the UASf (2020) report, their access to devices, connectivity and secure study space has been limited compared to that enjoyed by their socially advantaged peers. All HEIs have paid attention to working hard to complete the 2020 academic year in the face of COVID-19 (Parliamentary Monitoring Group, October, 2020) and overlooked the need to address specific needs and challenges of the disadvantaged students. What become apparent, as Minister Nzimande noted, was that, "the effects of COVID-19 had exposed quite graphically the extent of inequality globally and in the country". Thus if the academic year was

saved, it is pertinent to ask, "at what cost and whose cost?" The cost of saving it was heavily born by the disadvantaged students. While COVID-19 and the online teaching might have created completely new challenges for every student, the historically disadvantaged student had to deal with their traditional challenges as well as those compounded by the pandemic. The greatest burden has fallen on those institutions that have the highest proportions of students from the disadvantaged areas but also limited resources. Hence, in times of crisis, resources are strained and institutional capacity is limited making the disadvantaged students face unbalanced impact. Consequences are further amplified by the historical inequality of the South African society. Therefore, in times of crisis, it is important to ensure access to extra services for vulnerable students to foster equity, inclusion and their well-being. It is beyond doubt that it makes a significant difference in the lives of students coming from low socio-economic backgrounds and help counteract widening educational gaps. This further warrants and defend the quest for transformation in South African HEIs. Before the advent of COVID-19 and the resultant online teaching and learning modality a number of safeguards had been established to cater for disadvantaged students. More importantly, the momentum generated by students' call for university decolonisation signalled a promise and possibility for advancing the cause of the marginalised. Has COVID-19 eclipsed all these potential gains? While the above question is beyond the scope of this chapter, our argument, perhaps, seems to assert that the urgency and terror instituted by the COVID-19 pandemic, has magnified and intensified the marginalisation of disadvantaged students. We do not know yet, how many dropped out; what the actual experiences of those who persistent were; how the original interventions for disadvantaged student have been affected; how these interventions are being negotiated during the time of COVID-19? If the need to a just, equitable and accessible Higher Education is still on the drawing board, the imperative for disadvantaged students support in the COVID-19 and post COVID-19 ear require us to rethink transformation and decolonisation in this present moment of COVID-19 pandemic. Probably, even the notion of disadvantage needs a theoretical re-orientation beyond restrictive apartheid racial matrix. Under COVID-19 racial definitions of disadvantage might not suffice. We recommend

the following action plans to guide student support during and after the COVID-19 era:

Based on this study's findings, the government, HEIs and society at large should put effort to enhance enabling environment for imminent social change and sudden academic vitality. That is:

1. The government through Department of Higher Education and Training should ensure adequate provision of educational facilities most especially to the formerly disadvantaged institutions and the students from low socio-economic background. This is will facilitate the students' access to the required digital learning resources in order to cope with the new norm of online learning spaces.
2. The university management, being the custodian of academic activities should examine their strength in terms of utilising existing resources carefully to provide for the requirements of the university in terms of responding to crisis needs relating to teaching and learning. This in turn empowers the university to rely and depend on its human capital and capabilities towards productivities.
3. Universities to take stock of pre-COVID-19 academic development structures and realign them within the online teaching and learning environment
4. Universities to take stock of decolonization achievements and also consolidate them within the current context of COVID-19 pandemic.

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5

Psychological Barriers on Adjustment to Online Teaching and Learning in Universities During Covid-19 Pandemic: A Social Justice Perspective

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Introduction

Emergent and turbulent shift to online teaching and learning during the COVID-19 pandemic especially to institutions that were disregarding online teaching prior to the pandemic, caused tremendous psychological challenges that stemmed from a lack of experience, early preparation for virtual teaching and support from educational technology teams (Ivanec, 2022). Moreover, there are technical problems like network glitches, such as internet outages or computer problems that either slowed down the teaching process or hindered its success altogether. Mdiniso et al. (2022), pointed out that COVID-19 pandemic forced almost all learning institutions to make a transformation to a remote learning pedagogy due to health precautions to control the spread of COVID-19 and save the

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academic year. Thandevaraj et al. (2021), assert that some psychological barriers including depression and anxiety, affected academic staff, given that they were required to adapt to online learning method to ensure it was carried out as usual even though they had difficulties in various ways. It would be difficult for the academic staff members to prepare for online teaching without support from educational technology teams. Furthermore, if online conferences or lectures are disrupted due to network problems and failed to succeed on the stipulated date and time, this would cause frustration or anger because of transmission loss amid a lecture or presentation on the part of academic staff. Another psychological barrier would be resistance to change, due to ignorance about how to use technology to teach effectively. Moreover, the staff would also doubt themselves as well as doubt the effectiveness of e-learning methods since it was something new to them and they would not be talking to students physically. Considering this, Mdiniso (2022) recommended that academic staff undergo technology-related professional development to ensure successful integration and improved pedagogical practices. Additionally, there could be premature evaluation, where there would be inadequate teaching time, but the staff members find themselves rushing to give evaluative tests or assignments. Some of the psychological barriers reported by Saladino et al. (2020), were anxiety and depression. On the part of academic staff, anxiety and depression would result from a lack of self-motivation and sometimes due to inadequate e-learning resources and technical difficulties.

Considering this, Jameel et al. (2022), asserted that it was the duty of the decision-makers at universities to enhance the technological infrastructure and provide sufficient training to academics to encourage them to use e-learning. Universities had to provide data to vulnerable students but, however, students would abuse the data through navigation of the internet, instead of working on assignments. Sometimes there would be a lack of communication between academic staff and students after they had used up the data or there would be late submission of assignments, leading to frustration and anger on the part of academic staff.

Globally, when the COVID-19 pandemic struck, all nations had to figure out the next move. They had no option, except to impose a lockdown. Moreover, social, economic, health and industrial sectors were

hard hit compared to the education sector which remained resilient due to the sudden transition to digitalization of education systems. UNESCO (2020) reported that as of the 6th of April 2020, over 1 (one) billion students were affected across 188 countries at all levels of teaching and learning and that the education sector was one of the sectors significantly affected by the onset of the pandemic due to the vulnerability of its setting. In Iraq, Abdullah's (2021) study found out that most academics had no remote teaching prior experiences and most of them appeared to be unsatisfied with the provided online training of online teaching, online teaching platforms, internet access, students' participation and online assessment. Furthermore, Armoed (2021) reported that considering the pandemic, immediate implementation of the process of online teaching and learning modalities was required with a primary focus on maintaining a standard of teaching and learning that met the needs of both staff and students. Moreover, Losif et al. (2023), reported that dental education was severely challenged by the COVID-19 pandemic worldwide and that the pandemic affected the academic staff of the Faculty of Dentistry, University of Medicine, Romania, not only at a personal level but also at a professional, pedagogic one due to the introduction of online teaching system followed by the hybrid one.

The African continent also suffered the consequences of the pandemic. Considering the COVID-19 pandemic, Bwire et al. (2022), reported that scientists predicted the worst scenario to occur in Africa since it was the least developed of the continents in terms of the human development index, lagged behind others in achievement of the United Nations sustainable development goals (SDGs), has inadequate resources for provision of social services, and has many fragile states. Furthermore, Africa has the lowest number of COVID-19 research, and the least resources for public health, given that in some African countries 10% of the population is vaccinated as compared to 60% of the population in developed economies, yet Africa is the second largest and the second most populous continent with approximately 1.4 billion people (18% of the world population) in 2021. Moreover, Cabore (2022) pointed out that the African region is estimated to have had a similar number of COVID-19 infections to that of the rest of the world, but fewer deaths. Thus, in relation to the psychological barriers to adjustment to

online teaching during COVID-19, Africa is most likely to have had more challenges among academic staff in comparison with other continents worldwide, given the statistics on population, vaccination, and inadequate resource provision.

Similarly, South Africa, as a nation was not spared either on the effects of the global pandemic. Mpungose (2020) reported that South African Universities were forced to transit from face-to-face to online learning (e-learning) because of the coronavirus pandemic (COVID-19). Correspondingly, Mdiniso et al. (2022) reported that despite the evidence that remote learning makes work easier, this new content delivery method caught most Universities off-guard, especially those referred to as Historically Black Universities (HBUs) in South Africa. This implies that academic staff had to gear themselves, suddenly, for the transition to blended teaching and this would mean bracing themselves for technological advancement, otherwise without self-motivation, they might end up distressed out of an inability to navigate the transition from contact learning to remote teaching and learning (Mdiniso et al., 2022). Hlatshwayo (2022) argued that based on in-depth interviews made with students and lecturers and the use of internet resources, poor access to online learning experienced due to poor information and communications technology infrastructure and the challenges pertaining to access to laptops and computers by students from working class and poor households, made online learning during lockdown very difficult.

Subsequently, this affected academic staff psychologically as they would not be able to accomplish their objectives on time due to late submissions of essays and take-home examinations by some students. Furthermore, Hlatshwayo (2022) concluded that South Africa is still far from reaching its promise of the Fourth Industrial Revolution (4IR), which must supposedly be embraced by everyone. Hlatshwayo (2022) goes on to compare South Africa with other countries where reliable and communications technologies exist, that there was a smooth transition from contact teaching and learning to online-based learning systems. Thus, it appears that when students' education system is affected whether due to inadequate resources or pandemics like COVID-19, it negatively impacts the academic staff, as they are psychologically stressed, and naturally, if one teaches students, they consequently expect them

to pass. Armoed (2021) concurs with Hlatshwayo (2022) that due to socioeconomic challenges faced by South Africans, the education sector experienced numerous challenges in the implementation process of online teaching and learning modalities. This chapter analysed psychological barriers to adjustment to online teaching and learning among academic staff in universities during the COVID-19 pandemic.

Social Justice and Education

A theory on social justice is needed to inform one of what rights people have, which efforts merit strong state protection, how rights should be distributed and principles to manage trade-offs (Brighouse, 2002). Moreover, Brighouse (2002) proposes two principles that should guide social justice in education: fair equality of opportunity and equality of condition. Approaching the concept of social justice, as a geo-historical situational bound construction, results in continual reconstruction, without foreclosing future forms. Social justice is embedded in a struggle for social change, in particular struggles against domination and oppression of varying kinds. In this regard, Henkin (1989) points out that human rights, as currently known, are not about philosophical notions of justice, democracy, or a good society. The basic notion is that social justice must be impressed within a force field of interacting push-and-pull forces as well as inhibitors. pull forces consist of the historicity of the space wherein social justice is sought (the family, school, community, state and so on); the social needs and demands, expectations and agendas that actively promote a more just dispensation within the context; international trends and discourses, and the dynamics of technological advances and economic imperatives for development and job creation.

Psychological Barriers to Adjustment to Online Teaching and Learning

Significant upheaval is being caused by the COVID-19 epidemic in the lives of people and cultures throughout the world. This public health crisis has had a significant impact on all facets of modern society, including the educational system at all levels including the academic staff. Schools have been partially or completely closed as a result of the necessary deployment of various social distancing measures, and traditional face-to-face instruction has been replaced by online instruction. The great majority of educational institutions around the world have been touched by this significant change in instruction and learning techniques (Rettie & Daniels, 2021). Schools are crucial for the care of young people's mental health, and this cannot be emphasized enough. Schools have a special responsibility to provide a secure environment for their children. In this way, schools offer the assistance that is required for pupils to develop their unique capacities and other personal attributes. Realizing potential is the cornerstone of any young person's productive and healthy existence, and modern education typically emphasizes this as a top priority (Lem & Connell, 2004). Transitioning from face-to-face learning to online learning is challenging for all parties involved, in part because tactics and models employed in face-to-face settings might not work online (Graham et al., 2019). Despite the fact that numerous studies have looked at efficient methods for online learning, Arnesen et al. (2019), few studies have looked at how the academic staff deal with district-wide transitions on a broad scale and the challenges they face when teaching remotely in an emergency. Due to the unforeseen consequences in these cases, an institution must quickly switch to an alternative format. The academic staff must understand the causes of psychological and pedagogical barriers, as well as the ways, techniques, and methods of overcoming them in the course of interaction between academic staff and students, in order to be able to notice psychological and pedagogical barriers, constructively eliminate them, and even better—anticipate (Hirnyak & Vasylkiv, 2019).

Emergency remote teaching, a temporary switch from traditional, face-to-face teaching to an alternate, online learning technique under

high-pressure circumstances, was developed in response to the unprecedented pedagogical challenge posed by COVID-19. A psychological barrier appears to be a mental state that could prohibit someone from making the greatest decisions. Psychological barriers also affect people's capacity for reasonable interaction and communication with one another (Svetlana, 2022). From the literature review, the psychological barriers to adjustment to online teaching and learning among academic staff in universities during the COVID-19 pandemic are presented as follows.

Stress

Stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering their well-being (Folkman & Lazarus, 1984). The numerous emotional, health and other effects of the global COVID-19 crisis have already garnered a lot of empirical research (Taylor et al., 2020). Since the start of the global pandemic, studies have revealed increased levels of stress and unfavourable psychological states like negative affect, symptoms of anxiety and depression, as well as violent, hostile and addictive behaviour in the general population and among students (Richter, 2020). Furthermore, even while the COVID-19 health risk alone can be a considerable source of stress, all the sudden, dramatic changes that have occurred in people's everyday lives as a result of the situation have created other, possibly dangerous forms of stress (Buško & Bezinović, 2021). In a recent study by Hero (2020), 74% of teaching staff members indicated severe stress due to their difficulty adjusting to online teaching, and 40% said they had thought about quitting their jobs. Two-thirds of the participants, Hero (2020), reported feeling stressed out because it was difficult to address the students' emotional and mental health needs. Coping methods were also negatively impacted, with more than half of the participants experiencing severe stress from personal issues like financial worries (57%) or from institutional management decisions that they found frustrating (53%).

Similarly, Espino-Díaz et al. (2020), discovered that the abrupt nature of adjusting to the new technologies and cures within strict timelines

caused a substantial amount of stress among teaching staff during the epidemic. According to Spanish research by Robinet-Serrano and Pérez-Azahuanche (2020), reveal that the switch to online instruction caused a considerable increase in stress and exhaustion levels, for about 93% of teachers. According to Schaffhauser (2020), the rapid switch to online instruction caused varying degrees of stress in most teachers. According to Hero (2020), the difficulties encountered in addressing the students' emotional and mental health requirements were the cause of their stress. Coping methods were negatively impacted, with more than half of the participants experiencing severe stress from personal issues like financial worries (57%) or from institutional management decisions that they found frustrating (53%). According to the South African Depression and Anxiety Group (2020) study, 65% of respondents said they were very or very stressed out about trauma, gender-based violence, finances, relationship issues, job security and the coronavirus. If these feelings are not addressed, they may develop into mental health illnesses, such as post-traumatic stress disorder (PTSD), which can have long-term psychological effects and grow exponentially (Kar et al., 2020). This agrees with the social justice approach that argues that social justice is not an external condition or system, if it were an external condition or system, one could simply have learned social justice as one would have learned any other content-based subject in school. Thus, social justice is an ideal—a vision—that should be reinvented and reinvigorated by each generation so that it becomes a way of life that permeates all aspects of our lives (Knight, 2001).

Anxiety and Depression

According to Bauer (1965), anxiety is a dynamic emotional state characterized by tension, unease, worry and other uneasy feelings brought on by the impending or prospective threat of a person. Unnecessary anxiety lowers students' interest in studying and hinders their academic progress (Scanlon et al., 2020), however reasonable anxiety is helpful in enhancing the brain's reaction time and attentiveness, promoting learning effectiveness and engagement (Nasir, 2020). On a personal and institutional level,

anxiety and fear are visible. The influence on people's mental health is disregarded since it was prioritized over physical health in the global response to the COVID-19 epidemic (isolation through lockdown). Evidence of the effects on the mental health of academic staff seems to suggest that anxiety has replaced work-related stress as the staff members' top concern (Alliance for African Partnership, 2020). The competence and expertise of staff workers to offer instruction in the current environment (online) is a major factor contributing to their elevated anxiety levels.

Because everyone had to stay at home during the lockdown and all teaching and learning platforms participated digitally, there was anxiety among the academic staff. According to Tian et al. (2020), separation and lockout as well as the abrupt change in teaching mode have increased anxiety levels and put a lot of pressure on most individuals because of the potential risk of mortality brought on by COVID-19. The COVID-19 restrictions had a negative impact on Nigerians' mental health in several ways, including limiting their freedom of movement and putting them under lockdown. According to Tull et al. (2020), the COVID-19 limits have psychological effects like a rise in loneliness, a decline in social support, depression and anxiety. There will likely be an increase in depression and anxiety among academic staff worldwide (Poalses & Bezuidenhout, 2018). During a lockdown, the administrative personnel of a university in Spain displayed lower levels of anxiety but higher levels of depression than the academic staff (Odriozola-González et al., 2020). According to the same study, the psychological discomfort of academic staff members with comorbidities is much higher than that of academic staff members without comorbidities, which is cause for worry.

The COVID-19 regulations cause some obstacles to Nigerians' mental health, such as movement limits, lockdowns and a lack of independence. According to Tull et al. (2020), the COVID-19 restrictions have an adverse psychological impact by increasing social isolation, reducing social support, and causing despair and anxiety. For those dealing with severe situations like the COVID-19 pandemic in Nigeria, social support offers psychological benefits (Arslan et al., 2021). While social support from family and friends may be protective against depression symptoms and post-traumatic stress disorder symptoms (Liu et al., 2021),

Hou et al. (2020), stressed the importance of social support for mental health protection. Before the pandemic, reports indicated a worsening of the poor mental health of academic staff in South Africa (Poalses & Bezuidenhout, 2018). The abrupt need to adapt to online instruction, the blurred lines between work and home, the social isolation of students, the increased administrative labour and the insufficient organizational support are stressed in Africa (Poalses & Bezuidenhout, 2018). After the level 4 lockdown, about one-third of the academic staff in one of the Eastern Cape Universities, South Africa, generalized mild-to-severe psychological discomfort, putting them at risk of future mental health issues. These findings resemble those of studies on stress, sadness and anxiety among students and faculty at a Spanish institution during the COVID-19 lockdown (Odriozola-González et al., 2020). In agreement with the social justice approach, Rawl (1971) argues that a well-ordered society requires individuals with highly developed moral sensibilities should be taken as a starting point.

Inadequate Social Interactions

The COVID-19 limits were implemented during the pandemic period to safeguard physical health in Nigeria (Tull et al., 2020). In the same study, however, as stated by the participants, this measure had complex consequences due to insufficient social connection to their mental health. The individuals felt as though their independence had been taken away as a result of insufficient physical social engagement with their family, friends and other people. Tanhan et al.'s study from Turkey in 2021, where constraints on freedom were the most prevalent complicating obstacle among their studied population, reported a similar experience. Aboagye et al. (2020), discussed social issues and listed isolation as one of the difficulties students in Ghana faced when using e-learning to learn. Therefore, it is important that e-learning programmes purposefully foster a culture of cooperation among e-learning students. The lack of a link between students and other people in Nigeria has an impact on their mental and emotional health (Nasir, 2020).

In a university study, Yao et al. (2020), study in Eastern Cape, South Africa reported that lockdown and the social isolation it causes in one study to detrimental psychological impacts. The COVID-19 pandemic poses serious problems for both infected and uninfected people's psychosocial well-being (Otu et al., 2020), which is made worse by factors including ongoing lockdowns, infection-related anxiety, frustration, loss of income and stigma. According to Van Niekerk and van Gent (2021), improving academic staff members' mental health and resilience may help to lessen the likelihood that they may experience mental health problems while working for universities. This agrees with the social justice approach which argues that justice must be achieved amid scarcity, and that it must be able to function under circumstances of relative scarcity, where not every need can be met and where needs compete with other demands (Miller, 1999).

Lack of Experience and Preparedness

The unique nature of instruction in contemporary universities during the COVID-19 era dictates the urgent need for the active adoption of distance learning alongside traditional face-to-face instruction and its combination with that type of education, developing specialized learning techniques in terms of both traditional and distance education's learning tools and methods (Littlejohn et al., 2021). Through distance learning, academic staff members can develop their ICT skills and knowledge independently of outside influences (Fynn & Van der Walt, 2023). The active participation of students in the educational process is a key component of e-learning and distance education (Littlejohn et al., 2021). When a teacher assumes the role of a guide or even an advisor rather than an instructor, they become active collaborators as opposed to passive learners. Most academics find that teaching online is difficult and stressful (Lei et al., 2020). The online teaching method had to be adopted by teachers, which was unfamiliar to them. Online instruction necessitates an entirely different set of skills than face-to-face instruction since students are taught independently without group support. During

online instruction, the teacher cannot even read the pupils' facial expressions or emotions, making it impossible for the teacher to determine whether or not the students have understood. The majority of lecturers find it challenging to adapt their planning for in-person classes to online ones. This begs the question of the teachers' level of readiness to teach and their comfort with online or remote learning. According to Banda and Malinga (2021), teacher competences are context-specific, cognitive performance dispositions that are functionally responsive to situations and demands in certain areas.

Not everyone at universities and colleges enjoyed the rapid change from face-to-face contact classrooms to virtual teaching and learning platforms. People need computer literacy, internet Wi-Fi connectivity, network accessibility and workspace in order to participate in online learning. In other words, effective online learning requires a supportive setting with all of the requisite learning and teaching resources. Teachers were not equipped with the necessary abilities for online instruction or distance learning during the lockdown. Teachers were left to their own devices in their corners because neither the Department of Higher Education nor the institutions offered any online teaching training at the onset. Academic staff and students were not ready to adopt the distance learning modes, which created a difficulty. A prevalent problem for teachers in nations including Australia, Mexico, South Korea and the United States was a lack of basic digital abilities, which had an impact on the standard of online instruction throughout the schools (Dinu et al., 2021). Nevertheless, online learning was successful due to the independent and public schools' strong infrastructure, ample funding and pupils with stable socioeconomic backgrounds (Gewin, 2021). However, effective teaching could not take place without adequate training for teachers on how to conduct courses using digital learning platforms. Furthermore, because most schools relied on digital technologies and proper infrastructure to continue with teaching and learning activities during the lockdown, the disparity in access to education had a severe impact on how successfully teachers were able to instruct during that time.

To handle their professional jobs, additional administrative tasks and their personal and social life, lecturers need to be able to multitask. They must continuously keep themselves current and have a wide range of

abilities in addition to teaching, which can create additional stress and anxiety. These stressors can cause burnout if they are ongoing and are not accompanied by efficient coping skills (Robson et al., 2022). In agreement, Knight (2001) argues that the social justice approach, requires that every citizen should take the responsibility to protect, advance and promote the values, principles and ideals of social justice.

Abrupt Switch to Online Instruction and Preparation

The 2020–2021 academic year was referred to as the "new normal" by some. The "new normal" calls for a hybrid paradigm of instruction in universities. It will undoubtedly be necessary to blend in-person and online learning. Education resources must be modified for online learning because they cannot be supplied in the same format (Motala & Menon, 2020). Since it was predicted that the educational system might be operated remotely, university teachers were compelled to do so while attempting to educate online. For instructors, this presented a number of difficulties, including modifying their methods of instruction and adjusting to new technology. One of the difficulties they encountered was teaching via video conferencing tools, or the more recent task of producing educational videos (Naidoo-Chetty & Du Plessis, 2021). Universities have undergone a dramatic transition as a result of moving to online instruction. When compelled to present their lectures in a completely different manner, teachers who were accustomed to traditional teaching methods like lectures, oral contact and the use of the chalkboard or slides in class were more likely to have difficulties (Van Niekerk & Van Gent, 2021). These professors had to adjust their lectures for digital delivery, and in some cases, they had to start from scratch learning how to make digital content for online instruction. Most academics were forced to design new digital learning resources as a result of this abrupt shift towards digital learning, taking into consideration students who only had access to mobile phones or poor Internet connections. In this situation, educators looking for ways to continue presenting lectures may find the mobile learning (hereinafter m-learning) strategy to be their best choice (Zalat et al., 2021). PowerPoint lectures with

accompanying slideshows are examples of possible learning resources, as is giving students additional reading assignments.

New abilities are needed to produce audio and video materials for asynchronous instruction, such as podcasts. Since they typically don't require a fast connection, podcasts have proven to be one of the best and easiest ways to give traditional lectures utilizing voice. A successful podcast in the medical area combined personal reflections with clinical information, and its narrative format made it interesting to listen to (Iwu et al., 2022). Because of COVID-19, educational institutions all around the world are juggling a variety of online pedagogical strategies and working to employ technology more effectively. That is, many organizations all over the world have converted to a digital workflow as a result of realizing the urgency of the situation. The virtual classroom is not functioning properly during the COVID-19 lockdown. Improvements in virtual classroom quality are therefore urgently needed at this time (Adu et al., 2022; Banda & Malinga, 2021; Ja'ashan, 2020). Not only in China, but also in many other nations, the use of online pedagogy has increased and improved, especially with the use of the Internet of Things (Hofer et al., 2021). This growth in online education has occurred at an exponential rate since the COVID-19 outbreak in Chinese colleges (Daneshfar et al., 2022).

Due to this new development, educators must completely change the way they teach in order to adapt to the changing market conditions and scenarios. As a result, traditional classrooms were replaced by virtual classrooms overnight. Not whether online learning environments or virtual classrooms can deliver high-quality education during this challenging time, but rather how academic institutions will be able to adopt online learning on such a broad scale (Banda & Malinga, 2021). Resisting change would harm any educational institution, anywhere in the globe. They were evaluated based on how well they maintain quality and how quickly they adapt to changes in such a short period of time. The reputations of educational institutions are at stake, and they are being closely examined. Their ability to adapt is seen in how well they handle the situation and maintain the calibre of their education. There is no other choice except to transition from in-person lectures to online platforms. One day would not be sufficient for academic institutions,

for instance, to transform all of their college curricula into online materials (Iwu et al., 2022). Similar to this, the instructor can modify the course materials to work with online learning environments for virtual classroom purposes. A teacher needs to be well-prepared, creative and tech-savvy because online teaching is different from face-to-face teaching. The course materials should be updated as necessary, and the teachers should be informed of this. They must make sure that the content is properly positioned to avoid coming off as shallow (Zalat et al., 2021). This finding agrees with Brighouse (2002) which argues that social justice in education is essential and that it requires that every citizen must take the responsibility to protect, advance and promote the values, principles and ideals of social justice.

Lack of Self-Motivation

E-learning is a potent instrument for information and skill acquisition. E-learning has shown to be a vital set of competency education tools in the past during the COVID-19 issue (Hoffman et al., 2020). The COVID-19 crisis demonstrated how ready academic institutions were for the digital age. In particular during and after the crisis, quality education must be valued more because it aids in adapting to changes. However, COVID-19 has quickly altered the educational processes and required competencies. It was time for brand-new paradigms, strategies and fixes. The importance of motivation in academic and professional activities is well acknowledged by authors, and motivation involves a variety of psychological processes based on how individuals perceive the costs and rewards of various activities (Hoffman et al., 2020). An individual's desire to engage in structured employment in exchange for a number of usual outcomes (such as compensation or affiliation) is referred to as their motivation to work. Salary and career advancement are more frequently the driving forces for younger people. Age and the strength of social and security motives are frequently projected to be positively correlated as age and work experience rise (Kara, 2021).

It is important to notice the comprehensive study on Sustainable Academic Motivation (Van Niekerk & van Gent, 2021). The paper

examines the relationship between the idea of sustainability and motivation in higher education. It comprises a theoretical presentation that defines and explains the notions of academic motivation and sustainable motivation for sustainability. The core concepts of sustainability and academic motivation interact in a predictable and controllable way to form sustainable academic motivation. In order to establish motivational elements, the authors of the article surveyed educators in Poland and Slovakia (N = 181). In addition to the COVID-19 pandemic and the quick shift to telework, several of these factors—such as compensation, career advancement, professional development possibilities, strong relationships with co-workers, bonuses and premiums, were also included in this study. Higher institutions all across the world have been compelled to set up remote learning because to the COVID-19 pandemic, prompting concerns about how this may affect academic staff motivation. According to studies, people need to gain new technical, physical and mental competencies in order to transition to remote learning (Lei et al., 2020). Management should look for solutions to encourage academic staff to acquire these competencies.

The adjustment to remote learning involves a number of stressors, such as family obligations, health issues, and general safety concerns. The responsibility of Higher institutions in addressing academic staff well-being, upholding open communication and offering technical support is highlighted by prior research on remote learning during COVID-19. The feeling of isolation and labour and family disputes that come with remote learning are common, but they will worsen during the pandemic because isolation is not just a result of working long hours and because stress, in general, exacerbates conflicts (Robson et al., 2022). Regular management communication, positive motivation and organizational support for training opportunities to ease the transition period to working from home are among the protective factors that lessen academic staff stress and contribute to welfare (Naidoo-Chetty & Du Plessis, 2021). Insecurity, uncertainty and increased levels of stress and worry have all been brought on by this pandemic. However, the experience has also demonstrated that academic staff can collaborate more effectively by sharing strategies for modifying research and teaching

processes to fit the new environment. Academics and researchers collaborate remotely as a community in response to many difficulties in order to imagine life and changes in a post-pandemic future as well as solutions to survive the present (Svetlana, 2022). In agreement with social justice in the education approach, nations should with communities to repair damaged solidarities by reconciling autonomy and inter-dependence. This also implies the abolishment of structural forms of oppression that restrict peoples' access to resources and opportunities for developing and exercising their capacities or capabilities for living a decent human life.

Inadequate e-learning Resources and Technical Difficulties

The accelerated pace of technology development, the tendency towards globalization in higher education and the eradication of student boundaries have opened up new approaches and viewpoints for educational practice, including e-learning. Information and communication technology (ICT) is now applied in schools to help pupils learn more quickly. Academic personnel can complete administrative work more quickly thanks to it. Online e-learning is defined as learning activities carried out utilizing a variety of electronic devices with internet access, such as computers, laptops, smartphones and so forth, in synchronous or asynchronous learning environments. Online e-learning may serve as a platform to improve the flexibility, creativity and student focus of the educational process (Fynn & Van der Walt, 2023). When delivering content to students in rural and remote places, online course delivery is affordable and convenient. The United Nations (UN) and the WHO view the United online e-learning as a useful tool for addressing educational requirements, particularly in developing countries (Fynn & Van der Walt, 2023). Using various software/apps like Google Classroom, Zoom and Microsoft Teams to take online classes, medical colleges have devised a variety of innovative solutions to address the situation. This virtual class of e-learning was started to increase the students' certainty and confidence in their faculty throughout the COVID-19 epidemic, as

well as to finish the course and keep in regular communication with the students (Svetlana, 2022).

According to Zalat et al. (2021), throughout the past few years, we have seen governments seek to close the digital divide with a sense of urgency. However, the COVID-19 pandemic forced lecturers who are used to lecturing in person on campus to quickly transition to the advent of online learning. Online learning, according to Robson et al. (2022), is described as learning experiences in synchronous or asynchronous environments using various devices with internet connectivity, allowing students to learn and interact with teachers and other students from any location (independently). Academics are left attempting to negotiate the internet terrain, which for some is unfamiliar territory, in the midst of the pandemic's chaos. Given South Africa's wide digital divide, getting all pupils on board has proven to be difficult. The variety of their students is something that higher education institutions are rapidly becoming more aware of. Digital pedagogy is a notion that has gained more traction in educational circles as a result of the COVID-19 epidemic. In our technology age, education can develop thanks to this. Teachers need to be properly trained and equipped in order to fully appreciate this benefit (Littlejohn et al., 2021).

According to Banda and Malinga (2021), there is no one-size-fits-all method for teaching using technology because it depends on the particular technology being used at the time as well as the curriculum being taught. The ability of online teaching–learning methods to deliver high-quality education is not being questioned in these hard times; rather, the question is how academic institutions will be able to implement online learning in such a significant way (Dinu et al., 2021). Higher education has been impacted by the digital divide over time, but nothing has been done to close this gap. Long before South Africa was freed from apartheid, these disparities were growing. Naidoo-Chetty and Du Plessis (2021) claim that the massification of higher education during the post-apartheid era has forced all universities to enhance the availability of on-site learning tools. Infrastructure issues, money problems and significant student debt were all problems that educational institutions had to deal with. According to Motala and Menon (2020), some students depend on using computers and the free Wi-Fi on campus because they

do not have access to these technologies at home because of the socioeconomic status imbalance that affects many students. It is crucial to realize that there are different discrepancies between communities; while some houses may connect to the internet at considerable expenditure, a bigger group of low-income students find it challenging to transition to online schooling. They are unable to use these technological resources, which causes them to fall behind or quit school. This finding agrees with Brighouse (2002) which argues that social justice in education is essential and that it requires that every citizen must take the responsibility to protect, advance and promote the values, principles and ideals of social justice.

Conclusion and Recommendation

This chapter discussed psychological barriers to adjustment to online teaching and learning among academic staff in universities during the COVID-19 pandemic. On the basis of the findings from the conceptual review, it is concluded that one of the psychological barriers that hampered adjustment to online teaching and learning among academic staff in universities is stress, which emanated from personal issues like financial worries and institutional management decisions. Moreover, the academic staff reported increased anxiety and depression. There were inadequate social interactions that had complex consequences due to insufficient social connection on their mental health. The individuals felt as though their independence had been taken away because of insufficient physical social engagement with their family, friends and other people. Moreover, there was a lack of experience and preparedness and an abrupt switch to online instruction and preparation. The academic staff also had a lack of self-motivation. The importance of motivation in academic and professional activities is well acknowledged by authors, and motivation involves a variety of psychological processes based on how individuals perceive the costs and rewards of various activities. Finally, there were inadequate e-learning resources and technical difficulties among academic staff at universities. The findings in this chapter have implications for academic staff and university management. The study recommends that universities should develop regular mental health

programmes for staff to improve social justice. Moreover, universities should develop holistic counselling programmes for academic staff to address the effect of the pandemic on mental health.

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6

Digital Revolution in Higher Education in the Covid-19 and Post Covid-19 Era

Reuben Dlamini

Introduction

The economic value of higher education is extremely important as the context and curriculum relevance of programme offerings have the potential to impact economic activities. Hence, the declaration of the COVID-19 pandemic by the World Health Organisation resulting in University closures can widen the access gap to higher education. There is evidence that the participation of students in higher education from lower socioeconomic groups has been increasing (Moore et al., 2013). However, the sudden closure of universities in 2020 and the shift to remote teaching and online learning presented a huge challenge to the effort to sustain the education processes and curriculum coverage. Several studies indicate that digital education (online teaching and learning) became an alternative during the pandemic period in an

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effort to complete the academic year and the curriculum (Altunçekiç, 2021; Dlamini & Ndzinisa, 2020; Hodges et al., 2020; Khoza & Mpungose, 2020; Starkey et al., 2021). However, the shift to emergency remote teaching (ERT) and online learning has proven to be a challenge, especially in an unequal society like the Republic of South Africa and Africa at large.

While considering the importance of curriculum coverage and completing the academic year, the inequalities that exist in higher education, especially the socioeconomic inequalities, were made visible. Coincidentally, the reality was that "lecturers have not been adequately prepared to provide ERT and this has serious implications for systemic inequalities and epistemic injustice" (Dlamini & Ndzinisa, 2020, p. 62). Pre-pandemic, academic staff were already battling with the decolonisation of the curriculum and the pedagogical integration of information and communication technology (ICT) in their classrooms. Clearly, the curriculum already had structural defects due to the legacy of colonialism that was premised on the exclusion of the majority from participating in the economy (Chatterjee et al., 2020; Gethin, 2020). Hence, Dlamini and Ndzinisa (2020) raised the importance of understanding the tension between technology, context, and pedagogy while exploring innovative approaches and inclusive pedagogies to ensure that universities are keeping up with the contemporary needs of teaching and learning. This is to avoid a situation where "the technological tail wag the pedagogical dog" (Moll, 2012, p. 17). Thus, beyond the transition lies rethinking and reimagining our pedagogical practices that underpin the digital revolution in higher education.

Factors such as quality digital educational resources and digital equity have serious repercussions in the transition to avoid student exclusion or students being locked out. There is a need for institutions of higher learning to consider digital strategies and architectures to help them recover from the pandemic and embrace new drivers and enablers that will contribute to a systematic move to remote teaching and online learning. Given the shift to digital learning platforms, there is an urgent need to pay attention to students' learning and remote teaching. Resta and Laferrière (2008) identified the following five components of digital equity: hardware, software, internet connectivity, high-quality digital

content, and digital fluency. It is worth noting that the complex nature of ERT and the online transition has been recognised in a number of studies (Affouneh et al., 2021; Dlamini & Ndzinisa, 2020; Khlaif & Salha, 2020; Khlaif et al., 2021). This signifies the importance of a seamless transition to mitigate the risk of widening participation in tertiary education. However, the rising inequalities in a stagnant economy have serious implications for the widening of participation in higher education, and in turn, have serious implications for the economic and social development of any country (Butcher & Clarke, 2021). Hence, the quality of teaching and learning as well as the learning conditions must be inclusive and accessible.

As a researcher and lecturer in a higher education institution, I experienced the transition to ERT as suddenly with no consideration of the complexities of ERT and online learning. In essence, academic staff were forced to change their instructional and pedagogical activities and students were compelled to learn online in a country and a continent (Africa) with extreme inequalities. In terms of course design, content presentation, and assessment activities, ERT and online learning are different from traditional face-to-face learning. Hence, the aim of the study is to understand the digital revolution in higher education during the pandemic period and to place South Africa at the centre to explore the challenges of the transition in order to mitigate the risk of students being left behind and to apprehend the future of tertiary education. The study seeks to answer the following questions:

- What are the elements of digital education that enable inclusivity in the context of emerging economies?
- What are the factors affecting the digital revolution in higher education that can ensure inclusivity and continuity in curriculum coverage?
- How are the factors affecting the digital revolution in higher education influencing the implementation of digital education in an emergency situation in an unequal society?

Method

Through a metasynthesis approach a critical perspective on technological determinism shaped the arguments and questions that digital technologies raise in an unequal society due to socioeconomic inequalities. The metasynthesis approach entails a thoughtful examination of the research methodological process to generate and analyse data (Minnaar, 2011). This chapter aimed to continue the discourse on digital revolution in higher education insights from the studies included were used to substantiate the argument on technological determinism, exaggerated techno-optimism and help to answer the questions on digital technologies in an unequal society.

Literature searches were conducted in the Google Scholar database using forward citation snowball searching (Wohlin, 2014). According to Wohlin (2014) "In forward snowballing, for papers included, look where the paper leading to the new paper is referenced and identify papers referenced in a similar way" (p. 7). In the forward snowballing approach papers being examined were studied using Google Scholar by first studying the titles and then followed by the abstracts. Studying the abstracts provided with more information on the paper then a decision is made to include it and that's when the entire paper is read and those citing the paper are examined and the status of the publishing journal or avenue is verified to ensure that only credible studies are included. In Google Scholar the following was examined via the following criteria:

- Title
- Credibility of the Publishing Venue—checking on the editors standing in the field and also the reviewers especially with conference proceedings.
- Author(s)—their standing in the field.
- Google Scholar Cited by to ensure relevant evidence towards the theme of the chapter

Studies were appraised as suitable for inclusion using the criteria above and forward snowballing showed a higher precision as 241 records were

screened, but 34 studies were included and analysed according to established guidelines for the synthesis of both quantitative and qualitative research. A number of iterations were performed looking at the number of those who cited the work and also the impact factor of the different publications were considered. While the forward snowballing showed a higher precision, but the trick is on the search string. Upon examining each paper based on the above information the reference lists were examined and also where and how the paper is referenced was important. The research questions played an important role as all included papers needed to help answer the three research questions.

Digital Revolution in Higher Education

> We underline the importance of removing barriers to bridging the digital divide, particularly those that hinder the full achievement of the economic, social and cultural development of countries and the welfare of their people, in particular, in developing countries. (World Society on the Information Society, 2005, p. 1, article 10)

In order to fully implement digital solutions, there must be a consideration of the "complex factors, resources, and interventions required for supporting social inclusion" (Resta & Laferrière, 2008, p. 765). As pointed out earlier, quality digital educational resources and digital equity are core to the digital revolution in higher education. The idea of digital education is to offer advanced digital learning platforms that enable distributed cognition; however, it is important to understand the elements of digital education that enable inclusivity in the context of emerging economies. Therefore, the question is asked, what are the elements of digital education that enable inclusivity in the context of emerging economies? Institutions of higher education were already investing in digital learning platforms in an effort to accommodate large classrooms because digital education has been a long-term strategy to enable ubiquitous education.

COVID-19 coincided with the massification of higher education and the long-term strategy, which already created a dilemma, especially for academic staff who had to deal with large classrooms and the constant changing social structures affecting instructional activities. When juxtaposing the challenges academic staff had to deal with in creating an inclusive classroom in traditional face-to-face teaching with the challenges in ERT, the demands for new pedagogical approaches are visible. However, in the former it was business as usual while the latter demanded immediate creativity on how to present content and continue teaching to ensure that the academic year was not lost. There are many variations in the level of access or digital equity for social inclusion that has serious consequences for ensuring that all students are connected to learning resources while lecturers have well-developed digital fluency. With the well-rehearsed Western-centric higher education divorced from the contextual realities of developing economies, the pandemic period made visible some of the structural and curriculum gaps.

From a digital education researcher's point of view, digital education has the potential to inform the creation of more inclusive curricula that acknowledge the backgrounds of students in an unequal society. However, there must be basic digital infrastructure, and connectivity issues and digital fluency issues must be addressed to realise the benefits of digital education. According to Hughes, Michener, Mohamed and McDuff (2019), "inclusive curriculum, encompassing diverse perspectives and strategies, is more rounded, relevant and meaningful" (p. 3). This work is not in anyway subscribing to what Díaz Pabón et al. (2021) called "playing the familiar academic game of moaning about gaps and lacunae, as if we are not getting our fair share of pudding at the dinner table" (p. 107). This is about challenging the adoption of a Western-centric approach to digital education as a template for the implementation in higher education, especially during the COVID-19 and post-COVID-19 era.

While the South African case may not represent or be a true reflection of the African continent, South Africa's levels of inequality are documented as the highest of all countries that have data on inequality (Bhorat et al., 2017; Chatterjee et al., 2020; Gethin, 2020; Statistics South Africa, 2019). During the pandemic period, the transition to

digital education was highly skewed across the 26 South African universities because of limited digital resources and the ever-present funding pressures. Dlamini and Dewa (2021) made visible the uneven distribution of digital practices and literacies that exist despite technology being considered "the hallmark of civilization" (Brock et al., 2010, p. 1041). Previously disadvantaged or historical black universities suffered the most because of inequitable government funding and distribution of digital resources. In order to maintain instruction during the COVID-19 pandemic, moving to digital platforms could enable ubiquitous teaching and learning in networked environments. However, the speed with which the transition had to happen was unprecedented, creating a less-than-ideal situation for under-resourced universities. While connectivism has recently been acknowledged as the new learning theory for a digital age, in South Africa and Africa at large we have a unique context that requires specific and not generalised attention. Therefore, research on digital education enabled through educational technology,

> needs to be pursued more vigorously along social scientific lines, with researchers and writers showing a keener interest in the social, political, economic, cultural and historical contexts within which educational technology use (and non-use) is located. (Selwyn, 2010, p. 66)

Any "technological determinism" approach is flawed because we cannot have a situation where "the technological tail wag the pedagogical dog"(Moll, 2012, p. 17). There are structural defects in the current higher education environment because of the legacy of apartheid; thus, a radical adoption of digital education can create cleavage among students, among the haves and the have-nots. In a level playing field, connectivism is ideal for the digital revolution in higher education or education in general as it "reflects the many shifts in contemporary cultural narrative including increased recognition of systems, complexity, and interrelatedness" (Tschofen & Mackness, 2012, p. 125). This is in an ideal context with complex networks; however, in an under-resourced and unequal society, the complexities and challenges are beyond neural and social networks. In this chapter we engage with the four key principles for

learning emanating from the connectivist thought: "autonomy, connectedness, diversity, and openness" (Tschofen & Mackness, 2012, p. 125). We use this to understand the interplay between digital affordances and digital revolution in higher education. The functionality of sociotechnical configurations do enable the four key principles for learning, but it is dependent on the social fluency of the participants.

Unfortunately, technological adoption and appropriation in society are treated similarly to legislative acts to establish a framework for public order. Lacking foresight in the unpredictability of complex digital technology configurations could have unintended consequences to accessing tertiary education. Embracing digital education is the way to go, but it is complex. Hence, there is a need to look at the various dimensions of online learning (digital education) from a different point of view than that of technology affordances (Hodges et al., 2020; Means et al., 2014). Technology affordances in education are well documented, but there must be well-developed digital educational resources represented in multiple ways that are inclusive, and it should not be like the current conditions where students are treated as a homogeneous group. Mentis (2008) pointed out that there must be "reciprocal interaction between technology and pedagogical practices" (p. 217). Dlamini and Ndzinisa (2020) established that "institutional structures are rigid and not welcoming to new pedagogical practices" (p. 56). To avoid the perception that digital education is weaker than the traditional Western-centric university, any transition (revolution) must be informed by instructional design principles and dedicated services (institutional factors), taking full advantage of the technology affordances aligned with curriculum objectives.

Instructional design principles are well-researched to generate appropriate educational activities for a wide range of diversity (Elias, 2010). In this context, South Africa has been firmly part of the international community; however, the rampaging effect of the pandemic had a negative impact on traditionally underrepresented groups. Hence, adopting teaching strategies that were not contextual with no value to diversity meant widening the participation and inequalities in student experiences. Thus casting doubt on leveraging technology affordances while the students' context is neglected.

The Social Determinants of Inequalities in Higher Education

In the past 10 years, South Africa has embraced the massification of higher education. The vast majority of students are not expected to attend highly endowed universities such as the University of Cape Town, the University of the Witwatersrand or equivalents, but are accommodated in lower-status and less-endowed universities. Importantly, promoting inclusive digital access in schools and local communities has been central to fostering digital knowledge competencies to facilitate social collaboration that is aligned with the socio-constructivist approach on the active construction of knowledge through the use of technology (Mhlongo et al., 2017). Hence the importance of answering the question, what are the factors affecting the digital revolution in higher education that ensure inclusivity and continuity in curriculum coverage? Along with the expansion of digital education, the actualisation of ICT or digital affordances is dependent on all actors' digital knowledge competencies as an enabler in the digital economy.

According to Dlamini and Dewa (2021), the integration of ICT "is associated with an inclusive learning environment and the reduction of educational inequality by enhancing learning opportunities and capital accumulation" (p. #). In lieu of this, the social factors widening inequalities in higher education could be attributed to limited exposure and epistemological access because of social and cultural capital. According to Lin (2008), social capital is "resources embedded in one's social networks, resources that can be accessed or mobilised through ties in the networks" (p. 4); Bourdieu (1983) ascertained that cultural capital can be a source of social inequality. Dlamini and Dewa (2021) through Bourdieu (1986) lens having access to digital skills and competencies indicate cultural capital hence digital fluency is no longer an option in higher education. Many discussions of ICT affordances in education understate the importance of context and overstate the pedagogical affordances. The danger of overstating the affordances can be exaggerated techno-optimism.

The Republic of South Africa invests far more in consultants for the development of well-written education policies than in addressing the socioeconomic structural deficiencies. Policies that are informed by

context and supported by meaningful investments have the potential to reduce education inequalities. Socioeconomic structural deficiencies underlie many education inequalities in Africa, more so in South Africa, and compel lecturers to deal with non-education activities such as poverty instead of focusing on education matters. Shifting attention to non-educational activities affects curriculum coverage and financial resources. Such social determinants of inequalities in higher education between and within countries are avoidable. Hence, strengthening the existing lower-status and less-endowed universities could reduce tertiary education disparities.

Digital education solutions are not enough; however, establishing equitable tertiary education and narrowing education access could reduce the gap to economic participation. Students' attainment is clearly multi-dimensional and complex, but there is evidence that education disparities are striking between the rich (advantaged group) and the poor (marginalised group). Relying on a student-deficit model is flawed, and the argument that students from particular backgrounds do not have the appropriate facility to do well in higher education has no merit. This chapter argues that to ensure equality of opportunity for all students in higher education all countries, especially developing economies, must place higher education equity as a shared priority to which the public and private sector of society must contribute in order to build sustainable education equity. Inclusive curricula and increased investments towards action on social determinants of higher education access are also a must to close the gap on the increasing inequalities within and between countries in higher education institutions.

The Intersection of Digital Technology & Digital Education

Digital technology complements the existing administrative and academic infrastructure of education systems and applications. However, what constitutes a digital evolution is not merely rolling out digital technologies to enable ubiquitous education. Hence, the question is,

how are the factors affecting the digital revolution in higher education influencing the implementation of digital education in an emergency situation in an unequal society? Given that the physical "brick and mortar" classroom has lost its monopoly in education, there are many purported digital affordances that need to align with education. Distributed cognition is intimately connected to digital education; hence the importance of understanding the elements of digital education and digital affordances that enable inclusivity in the classroom. Despite the fact that digital technologies have been widely accepted in higher education, as evidenced by the proliferation of digital strategies (Dlamini & Ndzinisa, 2020; Khoza & Mpungose, 2020; Mhlongo et al., 2017), there is a dearth of knowledge on human computer interaction in education, especially in developing economies, to inform professional education practices.

The potential benefits of digital technologies in higher education are enormous, as detailed by a number of studies (Abad-Segura et al., 2020; Dlamini, 2021; Drennan & Moll, 2018; Flavin & Quintero, 2018; Salas-Rueda, 2020). However, the "provisioning of ICT infrastructure must not be construed as automatically affording learners attainment because there is intrinsically nothing in the provisioning of ICT tools that automatically guarantees cognitive development" (Dlamini & Nkambule, 2019, p. 922). To know about technology is not enough, and in my view, understanding the interplay between the technical and pedagogical dimension make it clear that this is not a linear process. Hence the pedagogical integration of ICT in education is multidimensional and complex as it brings together different knowledges. As a result, education practitioners need to develop their digital fluency and technological pedagogical knowledge to realise a seamless transition.

Of particular interest in the higher education context is the development of inclusive educational architecture focusing on leveraging various technologies in the transition to the Fourth Industrial Revolution. Our claim on the Fourth Industrial Revolution 4IR is premised on digital innovations that exacerbated the new game-changing technologies transforming our professional and personal practices. The pillars of digital education are curricular digitalisation and institutional digitalisation. However, in order to realise inclusive digital education, there

is a need for digitally fluent human talent that is supported by robust digital transformation teams to enable both academic staff and students to navigate academic obsolescence. The focus on the multidimensional interaction of both academic staff and technological innovations must be well supported in order to develop a richer teaching and learning environment.

When one considers the complexity of digital technology integration in the classroom, there must be research to develop good practices to inform instructional delivery that enables richer engagement with content and interaction among learners and the lecturers. In recognising the digital technologies' affordances, there is evidence that learning in a multiplicity of settings can be achieved in higher education (Kearney et al., 2012). This will replace students sitting in classes listening to lectures, memorising pre-packaged assignments, and regurgitating information. However, in the context of South Africa and Africa, breaking the traditional schemes demands sizeable investments in private–public partnerships. Central to the digital revolution in higher education is learning management systems (digital learning platforms). Although learning management systems support ubiquitous education and distributed cognition, digital infrastructure and digital skills are essential and core to the revolution.

The focus needs to shift to complex instructional systems supporting integrated face-to-face and online learning where lecturers and students co-create subject knowledge. The complex instructional systems, such as learning management systems, enable lecturers to track students' performance and provide automated predictions of future progress via dashboards (Sarikaya et al., 2018; Williamson, 2016). Incorporating dashboards to exploit datasets to support decision-making processes and facilitate understanding is as important as digital learning platforms. Dashboards are used to visualise and manage data to generate knowledge to support data-driven decision making (Sarikaya et al., 2018; Vázquez et al., 2019). There is evidence in the literature that dashboards offer impactful directions for future education and research as they are the primary interface to big data (Sarikaya et al., 2018; Vázquez et al., 2019; Wexler et al., 2017). In addition to supporting data-driven decision making, dashboards provide insights into how students engage with the

learning materials and allow students to view their progress at glance (Roberts et al., 2017).

This has implications for self-regulated learning and academic achievement because in the process it increases self-reflection and self-awareness, allowing students to make adjustments to their learning approach (Roberts et al., 2017; Sarikaya et al., 2018; Vázquez et al., 2019; Wexler et al., 2017). Upon engaging with their dashboards, lecturers can reflect on their pedagogical approach, which could lead to behavioural changes in their teaching practices. Evidently, the intersection of learning management systems and dashboards leads to smart education as students' interaction with content and their progress can be accessed in real time. The interplay between the two technologies has a huge role in learning in real-time and providing timely feedback, and it gives lecturers the opportunity to study students' patterns in the class regarding their performance in different topics in a subject. This can be done without the laborious quantification used in current traditional education settings.

Discussion and Conclusion

Socioeconomic disparities are central to the inequalities in the social distribution of education in South Africa and Africa at large. The concept of social determinants should occupy a pivotal place in the new reconfiguration and the rethinking of universities given students' social and economic circumstances. Hence the importance of understanding the factors affecting the digital revolution in higher education to ensure inclusivity. As we know, these social factors undermine access to quality higher education and could widen the gap to access tertiary education. The class disparities in emerging economies across the globe must be eradicated through new policies and an equity dimension in the reconfiguration of the higher education space to reduce inequality in educational attainment.

There must be a broader commitment from governments to promote education equity and make financial resources available to all

students, especially those from disadvantaged communities and poverty-stricken families. At the national level, governments could follow the determinants-oriented as identified in the previous sections to secure greater education equity, especially in institutions of higher education. There is evidence in the literature that the fundamental determinants of education inequality are the social and economic circumstances. These determinants have a significant impact on students' success in higher education, and in the long run, those students get socially and economically excluded.

The long-term effects of such exclusion are detrimental to the future prospects of those students to participate in economic activities related to income and working conditions. This also affects the social fabric of their communities; hence access to higher education is not optional. This validates the importance of social and cultural capital in the networked society. The social fabric of communities is a key component to addressing social determinants of tertiary education, especially epistemological access. Digital education has the potential to enhance learning opportunities and capital accumulation, but digital infrastructure and resources must be well-established and be systematically supported. The proliferation of digital technologies alone has not in any way resulted in reduced social gradients in higher education (the greater the degree of socioeconomic inequalities, the steeper the gradient of education inequality). Yet, students participating in higher education institutions expand their social networks, thereby stimulating professional and personal development. Thus the issue of digital affordances must be supported through policies and investments to avoid exaggerated techno-optimism.

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7

An Analysis of COVID-19 Related Factors that Affect the Girl Child's Access and Participation in Education

Lewis Madhlangobe and Zvisinei Moyo

Introduction

There has been significant effort among scholars to examine gender issues in education. In the advent of COVID-19, early research shows girls and women at increased risk of infection and gender-based violence as they continue to shoulder most of the household chores (World Bank, 2020). It is important to note that before the onset of COVID-19, scholars in African countries, for instance, Ghana, Kenya, Nigeria, South Africa and Zimbabwe, had paid attention to economic, historical, political, social and cultural factors that propagate gendered power hierarchies (Author,

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2019;Chabaya & Gudhlanga, 2013; Greyling & Steyn, 2015; Moorosi, 2010; Netshitangani & Msila, 2014; Shabaya & Konadu-Agyemang, 2004). After the arrival of COVID-19, the emerging scholarship on the pandemic has focused on its effects in schools (see for example, Belhadjali & Abbasi, 2020; Kaul et al., 2020; Manca & Meluzzi, 2020). Some have examined the disparities in connectivity, and access to digital devices (see for example, Dube, 2020; Harris & Jones, 2020; Ramrathan, 2020; UN, 2020) and oppression of women emanating from cultural beliefs, gender discrimination both at home and at the community level (Agyeiwaa & Attom, 2018; Qadir, 2019). This body of literature highlights that African girls and women are grappling male dominance in addition to challenges they have always faced (Allen et al., 2020; Gabster et al., 2020; Power, 2020; Ramos, 2020). However, none paid attention to how the COVID-19 pandemic has affected or worsened the girl child's opportunities to access, participate and succeed in primary education. Authors of this paper take note that COVID-19 might have worsened the plight of the girl child in Zimbabwe, warranting this study. The authors paid attention to foregoing studies, with respect to examining the interplay of girl child's opportunities to access, participation, socio-cultural norms and success.

Indeed, World Bank (2020) emphasises that times of crisis, including the COVID-19 global pandemic, exacerbate the social inequalities and intersectional injustices upon which patriarchal institutions thrive. Emmanuel (2020), further affirms that the long-lasting detriment of COVID-19 includes that some students may completely dropout of school even after the pandemic has ended, but when? The major concern that has emerged is that online-based learning is only reachable to learners with a sufficient home-based broadband connection (Manca & Meluzzi, 2020). The immediate negative connections between school and family boundaries and girls' progression, sets forth that girls and women often miss progressing their career in view of the decisions they make to accommodate their familial roles (Qadir, 2019). Nonetheless, times of crisis may offer critical opportunities to rethink, reorganise and destabilise oppressive practices and systems.

The contribution of this study lies in the most important concern of most African societies, the oppression of girls and women. Therefore, this

study finds relevance among scholars, gender activists and government departments interested in addressing the oppression of girls and women as well as providing signposts to guide future research. This study intensifies its voice to the concerted efforts pursuing a revolutionary approach to transforming institutional matters for supporting gender equity. It paves ways of endeavouring to find solutions that will alleviate female oppression in Zimbabwe. In this regard, scholars have detailed the multi-layered crises in Zimbabwe, political and economic crisis, violence and development (Hwami, 2013; Mlambo & Raftopoulos, 2010; Mvundura, 2014; Ndlovu-Gatsheni, 2012); yet, there is a current dearth of the examination of how the COVID-19 pandemic has affected or worsened the girl child's opportunities to access, participate and succeed in primary education making our study timely.

As the paper progresses, a brief background to the study is given followed by the purpose of the study, research questions, literature review and methodology and methods used in the study. The findings from the data are presented in themes followed by a discussion. The arguments are then summarised in the conclusion.

Background to the Study

Life changing events like social change, climate change, national economy, cultural contexts and natural disasters effortlessly affect the development of all vulnerable children, the girl child included. In some situations, responsible authorities easily ignore these and other events surrounding these life-changing contexts as flyby-night events that need little or no recognition (Devani, 2013). Leadership of all types needs to take the front row seats to manage the reduction of the impact of these events. However, girls who make it through their family support under the cited contexts/events seem to promote the view that other children who do not succeed or struggle for themselves under similar circumstances are either negligent or a result of irresponsible behaviours from their parents or guardians (Roudi-Fahimi & Moghadam, 2003). There is so much literature on the positive effects of investing in the education of girls in the areas of national and social development that publications no

longer reference to such claims. There is an old adage that, *'The closest to a silver bullet in human development is educating women… particularly mothers'* (Malik, 2014). Experience reveals the value of accomplishing this ideal strongly depends on many variables instead of the single variable sending the girl child to school. While access to and participation in education opportunities has improved in Zimbabwe, still, new events in addition to low-quality education leaves what we may wish to term a *'legacy of illiteracy'*[1]. In Zimbabwe to be specific, recent events have played a negative role on developing unequal opportunities and these include—the persistent year-on-year droughts, high learner-teachers ratios, unfavourable political climate, the struggling economic environment; and natural disasters. Literature has described the different changes to the girl child's access to education, participation and success under these environments (Bergh & Couturier, 2013). Recently, and specific to the Zimbabwe context, the girl child was affected by two major events that may need strong policy responses since they are a new phenomenon—the Cyclone Idai and the COVID-19 contexts. Earlier, the

> International Bill of Human Rights… was [introduced as a] precursor to the MDGs [which was] laid down in the year 2000 by the United Nations, signed by 189 countries. Two MDGs referred directly to education, girls and women. MDG2 aimed to achieve universal primary education: the target being to ensure that, by 2015, children everywhere, boys and girls alike, would be able to complete a full course of primary training. MDG3 aimed to promote gender equality and empower women with its target being to eliminate disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015. (Millennium Development Goals, n.d.)

The events after Cyclone Idai in 2017, the first wave of the COVID-19 in 2020 and its ongoing mutation variants require that research actively looks into how best to ensure that no more gaps are created between the girl children and their male counterparts. In the past, studies

[1] In this paper, we define illiteracy as any level of or no education that does not empower the learner to survive under any social, economic, cultural or climatic context.

after each disaster revealed that the girl child remained behind while their male counterparts achieved better in education. For example, in terms of access to education, the government of Zimbabwe has increased numbers (access) of learners in primary school education since 1980. However, nothing yet has been done to improve the quality of teaching–learning outcomes that are often evidenced through three variables, (a) educational, (b) social and (c) economic gains. The reports of Education for All (EFA); No –Child Left Behind Policy, Global Monitoring Report (GMR) (2013/2014) warn that, although access and participation may have improved, low-quality education characterises the impact of the EFA policy. The GMR Report of 2013–2014 reveals that, two hundred and fifty million (250m) children leave schools before grasping adequate basic education skills although more than 50% of them may have participated in school for a minimum of four years. In Zimbabwe, researchers give little attention to the use of data to make decisions about learning outcomes (Munthali, 2014). Recent studies by UNICEF in 2019, revealed some schools achieved zero per cent (0%) pass rates at Grade 7 level; and some could read an average of at least 60 words per-minute in their local language.

Purpose of the Study

We designed this mixed methods study to describe how the COVID-19 pandemic has affected or worsened the girl child's opportunities to access, participate and succeed in primary education.

Research Questions

The following questions guided this study:

1. How has the girl child's access and participation in education been affected by the COVID-pandemic?
2. Which cultural aspects promote the suppression of the girl child's opportunities?
3. How are the school leaders addressing the impact of the pandemic on the girl child's participation and education (PE) in education at any of the levels?
4. How do school leaders involve parents in supporting access, participation and success in education by the girl child?

Literature Panorama on Girl child's PE

Cultural Aspects Working Against the Girl child's Opportunities

Literature identifies culture as an underlying factor responsible for perpetuating the inferior position of girls and women (Chabaya & Gudhlanga, 2013). The matrix of social identities of women intersect with patriarchal practices at different levels to create systemic injustices (Gatwiri & McLarren, 2016; Mutangirwa, 2016). The challenges may sound minor but in reality, they are far reaching. Early in life, people are culturally socialised towards a set of norms, values and attitudes shaped by the family, community and society (Banks & McGee, 1999; Norris et al., 2008). This social order has traditionally relegated women to private spheres including the home and children (Nnaemeka, 2003). Several studies (see for example, Moyo, 2020; Chabaya & Gudhlanga, 2013; Greyling & Steyn, 2015; Moorosi, 2010; Netshitangani & Msila, 2014) report that girls and women are negatively affected by the way they perceive themselves and their role in society. Being female restricts girls from pursuing professional careers; rather, femininity takes precedence. It is these factors that mould society's attitudes towards women, defining limits as to their capacity and relegating them to private spheres (Mutangirwa, 2016).

Another aspect of culture that has been explored is multiple responsibilities (for example, household care, family caretaker and motherhood) which they perform and are expected to fulfil regardless of being in school (Maposa & Mugabe, 2013). The study by Shabaya and Konadu-Agyemang (2004) established that, although factors perpetuating gender inequalities in other societies may be applicable to Africa, the African continent might be experiencing its own unique constraints. For example, these may include socio-cultural factors, extreme poverty, political factors, religion, socially constructed gender roles and colonial history. These factors enforce gender inequalities, not only in access to education, but also in other life domains. A combination of economic factors, cultural and social norms and stereotyped gender roles, have caused the disenfranchisement of women in education (Moyo, 2020). The society reproduces and sustains the patriarchal structures that oppress and subordinate women.

While society and parents groom girls towards marriage roles of wife, mother and family caretaker, boys are socialised towards heading households and breadwinner roles. In addition, females are socialised to be submissive and obedient housekeepers. Girls are socialised towards the communal traits, caring and submission to fit them into dependence on males and to ensure they please them. The differentiation of roles discriminates against females as sexual beings than human beings (Kambarami, 2006). To crown it all, Makura (2009) finds it logical to argue that women are not born with the inferiority complex, but are culturally educated to respect and uphold. There is evidence in literature, that girls and women of Zimbabwe remain subordinated because of historically constructed sexuality and the patriarchal nature of the society, its political, social and economic features are rooted in traditional values.

Social and Gender Norms in COVID-19 Pandemic

Social and gender norms have always played a role in educational investment decisions (Mutangirwa, 2016). Based on cultural grounds, families may be forced to reallocate resources for home schooling to survival as

always has been the case with other families or resources may be redirected to boys over girls in the face of COVID-19. The disruption of the school programmes such as closures can lead to an increase in the burden of care-related tasks- likely impacting girls more than boys in many contexts (World Bank, 2020). This is likely to affect their ability to stay engaged in education in extended terms. Simultaneously, as a side-effect of this crisis, both girls and boys may be forced out of schooling to contribute to income-generation activities for the household. Additionally, when girls drop out of school prematurely, they are likely to get married as children and have their first child before the age of 18, which can negatively affect their future prospects for education (World Bank, 2020). This is likely to affect their adulthood when they suffer from a lack of agency and decision-making ability within the household, and in society. In contrast, when girls and women are better educated, literature shows that they may be better positioned to access quality basic services they rely on including the quality of their country's institutions and leaders (Wodon et al., 2018).

The COVID-19 pandemic may have worsened factors driving early marriage including socio-economic aspects, such as poverty or a lack of educational and employment opportunities for girls, and cultural factors, as well as social norms (Wenham et al., 2020). In some societies, circumstances force girls to choose between opting for early marriage and remaining in school. When poverty makes it hard for a household to send all children to school, boys may receive preferential treatment for household investments in schooling, at least at the secondary level. Given that, the largest portion of the Zimbabwean population resides in rural areas where social and gender norms change slowly, the World Bank (2020) stresses that parents in traditional societies may place a lower value on girls than boys. According to Zimbabwe National Statistics Agency (ZIMSTAT) (2016) distribution of population in 2016, shows that of the total rural population, 72% were women, a sharp rise in the rural population from 5,561,475 in 1980 to 10,937,510 in 2016. Furthermore, with the closure of schools and economic difficulties teenagers may be at a higher risk of early pregnancy due to the adoption of negative coping strategies by themselves and/or their families. The interplay of rurality, gender and education cannot be underestimated. The majority

of the Zimbabwean population are not living in rural areas by choice, but have been forced by lack of employment and other political and socio-economic factors, to migrate. Poverty is the most permeating feature of rural areas in Zimbabwe, further worsened by illiteracy and patriarchy.

Methodology and Methods Used in the Study

This mixed methods study used two parallel research instruments to gather quantitative and generate qualitative data that helped to provide answers to the research questions that guided this study (Punch, 2009). To collect quantitative data, we used a structured survey instrument, which we distributed, to forty-three rural schools in three provinces of Zimbabwe. Similar to advice from related research literature, we distributed the survey to teachers by e-mail, and hard copies of the parallel questionnaires to parents of children that attended schools invited to participate in the completion of the survey (Lee et al., 2000). To ensure that we received answers from both educationists and parents of the children who attended schools that we were researching on, we sought help from the SDCs at each school to invite parents who would volunteer to complete the questionnaire and the surveys. Altogether, 400 participants volunteered to complete the survey and the questionnaire. Table 7.1 shows the breakdown of participants according to groups and the instruments to which they completed.

Table 7.1 Breakdown summary of participants and the instruments applied to the groups

Group	Number of participants	Type of instrument used with participants	
		Quantitative side	Qualitative side
1. School Heads	40	Survey	Open ended questionnaire
2. Teachers	160	Survey	Open ended questionnaire
3. Parents/ Guardians	100	Survey	Open ended questionnaire

For the participating parents, the researchers distributed envelopes with surveys and qualitative questionnaires with open-ended questions. The researchers designed the research instruments questions in a parallel form to allow the participants to address the same topics around the problem, although the questions were phrased in ways that allowed each group to understand the questions from their perspectives or groups as listed in Table 7.1. Parallel questions are questions that structured to elicit opinions on a topic, but respondents occupying different positions provided their opinions about the same problem, and in this case parents, teachers and school heads each group from their perspective (Wolcott, 2002). The instruments used in this study are listed as Appendices A, B, with C as the instrument that targeted the parents, while teachers and the school head responded to Appendix A.

Findings and Discussions

1.1. How has the primary school girl child's access and participation in education been affected by the COVID-Pandemic? (Fig. 7.1)

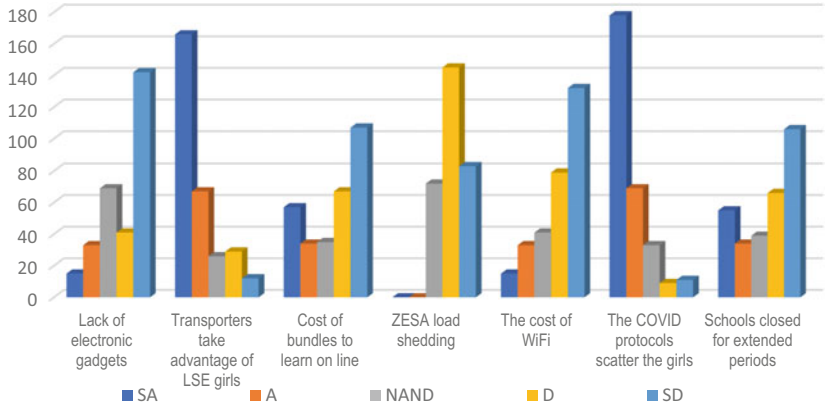

Fig. 7.1 How primary school girl child's access and participation in education was affected by the Covid-pandemic (**Key**: SA = Strongly Agree; A = Agree; NAND = Neither Agree Nor Disagree: D = Disagree; SD = Strongly Disagree)

From the findings, the outbreak of the COVID-19 ambushed learners with the new normal culture of learning. Most learners did not have electronic gadgets, bundles to facilitate learning and reliable Wi-Fi. Many had to travel to schools or Wi-Fi hotspots to access online learning processes. When they arrive at these places to start learning, the girls encounter so many interferences. Boys and other adults approach them and start conversations. One parent said, "And by the time they realize, time is up and they have not covered anything." The girl-learners find it difficult to observe the social distancing protocols because many interfere with their social distancing spaces. One teacher summed up the problem, "On the way to and from school, transporters take advantage of the learners in general but the girls take the most difficult brunt." In short, the extended lockdowns affected the periods that the girl child would engage with learning processes.

Transportation to and from Schools

Since the advent of COVID-19, new transport regulations guide the transportation of people between places. Most learners in this study attended schools that had no school buses (Fig. 7.2). Therefore, they randomly used the kombis and Mushikashikas.[2] Very few (31 of the 400) indicated that the girls who had dropped out cycled to school had some reliable transport arrangements. Therefore, the learners were exposed to dangers of abused by drunkards and touts most of who were reported to use '*mutoriro and broncho*.'[3] One teacher's response from the qualitative written answers indicated, "*Girls reported being taken to other destination instead of the schools. Out there, they were given alcoholic drinks and they were sexually abused. The one I am reporting on fell pregnant and never returned to school.*" Another parent added,

[2] Illegal pirate taxis that ferry people from place-to-place. They do not follow rules when it is rush hour. The drivers of such cars sometimes abuse the girl children.

[3] Strong alcoholic beverage that illegally brewed in the backyards. The beverages make the users drunk within a few minutes and they can become violent.

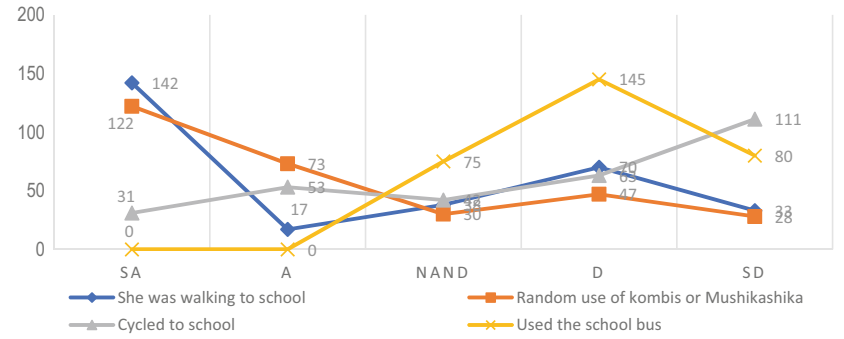

Fig. 7.2 Transportation used by the girl to and from schools during Covid-19 Lockdown

> The grade 7 girl I am talking about is my niece. She was enticed by an illegal gold panner [miner] outside Kadoma near Empress Mine and she was away for almost 10 days, got pregnant and then went to live with him. Thereafter, the boy left her for another one. Now she is back home.

The picture from the qualitative side, it is clear that the type of transport that parents could afford for their children was not safe. The learners were exposed to dangers of abuse, to which most fell victim.

2.2. Which cultural factors promoted the suppression of the girl child's opportunities?

Cultural values limited the girl child's chances of going to school regularly during COVID-19 lockdowns. In family settings, culture is critical on the decision-making processes. The values, beliefs and practices that are dominant among people in a certain culture dominate the way people decide who attends school. Findings reveal that parents and guardians offered boys the first preference when finances became scarce. Culturally girls have no option to choose or decide on the choice to go to school or not. In some cases, the girls had to attend to household chores or wait to get married as guided by the religious practices and cultural practices. One female participants confirmed the findings shown in Fig. 7.3,

You see what happens, besides the girl who was in my Grade 7 class and dropped out due to pregnancy, many girls got pregnant by some boys in high school. The boys who went for '*makasera*'[4] come back and with a bit of money they earned out there, the next thing they wanted a wife. The easiest target were the primary school kids mufunge.[5] So, you can see children are getting married due to money issues and others it's sanctioned religiously by church elders. The parents give their blessing especially with the cultures of the Chewa and people from Mbembesi in Matabeleland South. You need to see the attendance registers to confirm how the girls are affected. More girls than what you have seen here dropped out. It's a big issue Sir. And it's so sad, some girls are now back with their parents.

3.3. How are the school leaders addressing the impact of the pandemic on the girl child's access, participation and completion (APC) in education at any of the levels? (Fig. 7.4).

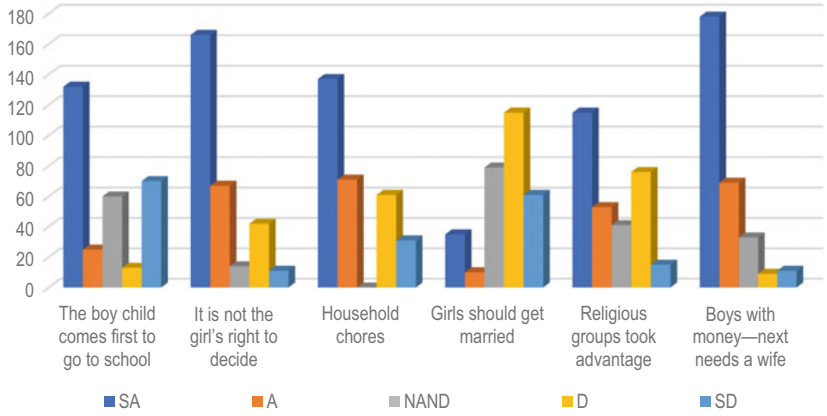

Fig. 7.3 Cultural factors that used to suppress girl child's opportunities to participate in e-learning

[4] Gold panning.

[5] Just imagine!

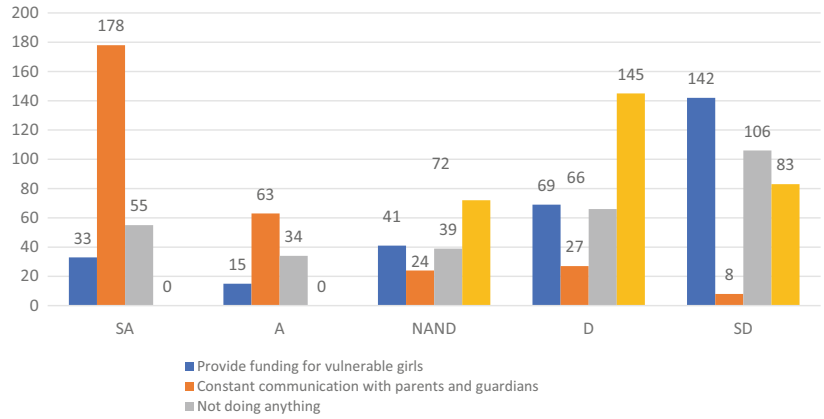

Fig. 7.4 Strategies used by school Heads to help primary school girls to access and participate in learning during COVID-19 Lockdown

School heads used various strategies to keep the girl child in the classroom. These included; maintaining constant communication with parents to ensure they were all kept well-informed. Few indicated that they were providing funding of the girl child's education through new donors besides the traditional funders. For the low-socio-economic backgrounds, feeding the girl child was used as the last resort, because it did not change their circumstances like falling pregnant.

> Whatever we do cannot stop them from being enticed to become pregnant. The people out there, including high school boys who are involved in artisanal gold mining do not observe rules that operate outside their focus. They want the girl, that's it, and they will get them.

4.4. How do school heads involve parents in supporting access, participation and success in education by the girl child? (Fig. 7.5).

Respondents in this study used 4 key strategies to involve parents in pushing the agenda for attendance by girls. They included accompanying the learners to school, creating an electronic WhatsApp register

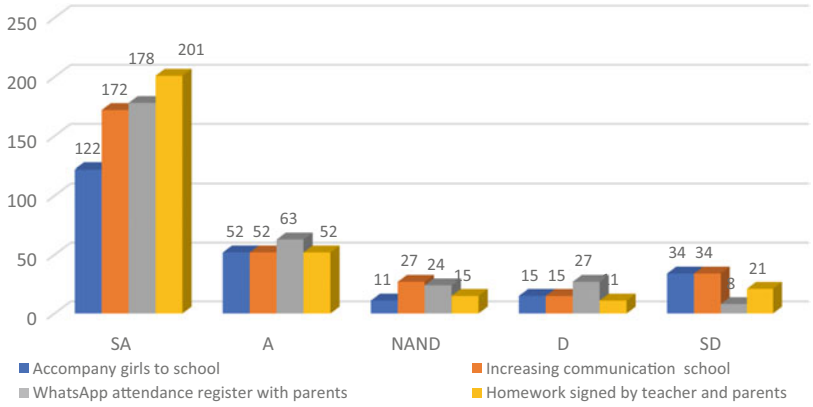

Fig. 7.5 Leadership strategies involving parents to support girl child's access and participation in primary school learning

accessible to all parents, increasing communication about learner attendance and signed homework by both parents and teachers. While others still felt that these approaches did not guarantee safety of the girl child, the participating respondents felt that all four approaches had the potential to alter the probabilities of the girl child failing to attend school and participate learning. Generally, findings reveal that for each variable the participants agreed strongly.

Other Discovered Themes

Other findings revealed that during the initial lockdown of the COVID-19, a number of parents or guardians lost employment, and they lost control over the girl child's behaviours. Girls started to flirt with boys and even older men and then got pregnant before dropping out of school. A few indicated that some of the girls who ended up out of school were now into drugs. Lack of coping strategies emerged as an outstanding finding of this study. This finding points to the need for teaching life skills among the learners (Fig. 7.6).

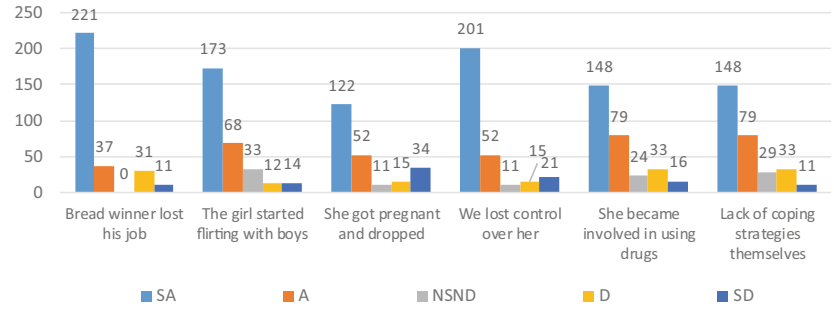

Fig. 7.6 Other discovered themes

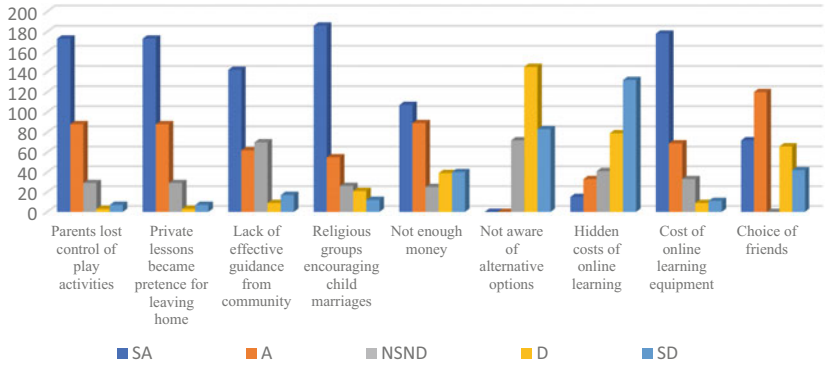

Fig. 7.7 Factors related to COVID-19 discouraging girls participating in education

COVID-19 Related Reasons that Caused the Girl Child to Drop Out of School

Availability of financial support is central to for ensuring that vulnerable girls in primary school girls receive support to help them to minimise any constraints on available choices regarding what they may do during the times of disasters that come through the air and other mediums (Fig. 7.7). The protocols were simply dos and don'ts. The COVID-19 protocols did not address the blind spots that were activated as cultural responses to access and participation of the girls in education. It is

imperative for responsible authorities to crosscheck that legal instruments guiding how to act during disasters is not overridden by cultural values, beliefs and practices. In the schools studied (n = 40 schools) findings demonstrated that most of the teenage parents were created during the first lockdown. Participants revealed finances as the main reason for dropping out of school and disengaging from learning. The study revealed that the girls who dropped out gave reasons that pointed lack of support for transport to school. This suggests a need for additional specified and targeted supports for learners from low-socio-economic status. The study raises awareness of the need and importance that government should attach to the education of girls. A policy document that makes it a crime to keep children of school going age at home even during a pandemic will enable and encourage the parents of the girl child to ensure access to education. These critical factors undermine the potential of primary school children to participate and succeed in school under the new COVID-19 normal. The aggregate effect of these life-changing variables has the potential to discourage learners from continuing with education in the increasingly digital world of schooling. The general education system of Zimbabwe is investing in online learning as dictated by the COVID-19 pandemic new ways of schooling. The findings show that it has become clear that learners who attempt to learn within the context of limited internet connectivity and family supports will continue to experience these barriers of accessing effective, dynamic and interactive methods of learning. These have potential to promote their research, innovative and industrialisation of their new knowledge. Learners that lose a day of learning will continue to fall back as the new concepts learned today will continue to confuse them as teachers go on with the learners who are on the same page with them. There is no clear significant indication that the Ministry Of Primary and Secondary Education (MoPSE) is making efforts to expand internet access to the rural schools, later on to the rural homes. The rural community is one constituency that MoPSE has continued to leave behind since the traditional teaching approaches. That focus is critical for safeguarding the engagement of learners from low-socio-economic family backgrounds' access, skills and knowledge that is needed to support the achievement of the vision 2030 set by the government of Zimbabwe.

Discussion of Findings

Literature places it beyond doubt that the girl child may have lost the motivation to have a place within the schools in the local area, except if in the event that they can stay in contact with fast-moving social developments through online stages (Wenham et al., 2020). Lack of social contact can altogether affect not only the girl child, but also their male counterparts. For instance, broken families, harmful families, childcare, lacking lodging and different instabilities all affect how the girl child may participate in learning activities. Compared to their male counterparts, girls incur additional social, cultural and religious-related risks during school closures. They span from an increased burden in domestic duties, mental health, disparities and forced lack of access to sexual and reproductive care, greater risk of gender-based violence including persistent sexual assault. All these factors affect girls' well-being differently than for boys. In addition, parents' loss of jobs may mean relocating to the rural areas leaving the girl child struggling to maintain a healthy social life.

The Zimbabwean government, like any other third-world countries is yet to launch dependable support packages to address these socio-economic inequalities. While online forms of learning have become a common discourse, we argue that there has been further digital divide given the Zimbabwean economic status and in particular specific needs of support considering the diverse socio-economic backgrounds. The pandemic has raised concerns about the implications of COVID-19 especially the possible long-term effects on participation in education. We contend that inequalities have widened and will continue to increase in terms of access and support available to the girl child. Learners from low-income families, vulnerable children and disadvantaged groups are the more likely to suffer as they may not afford high-speed internet connection and required technical gadgets for online learning. Existing gender inequalities in the use of digital resources and information and technology will therefore affect how girls participate in education compared to boys over that period. Related studies by the World Bank (2020) confirm that across low and middle-income countries, women are still 8% less likely than their male counterparts to own a mobile phone, and 20% less likely to use the Internet on a mobile, which has

the potential to limit their capacity to keep up with home-schooling materials. This implies that it will widen the gap between privileged and underprivileged learners creating inequality.

Conclusions of the Study

The study shows that cultural values, religious practices and beliefs constrained the girl child's opportunities of going to school during COVID-19 lockdowns. It has explored issues affecting the girls from the lack of equal education opportunities with limited resources to the limited opportunities that these situations present. The COVID-19 pandemic has worsened challenges of girls' schooling, which induced unfavourable effects on their ability to shape a desired future life for themselves. In addition, the findings of the study emphasised that it is difficult to achieve gender equality in a socially fragmented society. For instance, rural families experience challenges ranging from traditional patriarchal systems, norms, values and discriminatory religious practices, skewed distribution of material benefits, inaccessible education, marginalisation, poverty and isolation. The findings motivate the government to improve distribution of resources and facilities, facilitating possibilities for both genders participating through policymaking. Muting voices promotes the accumulation of personal and structural injustices like inferiority, alienation and marginalisation. Government policies should create a model for gender equity that promotes a flow of resources and dismantling gender hierarchies effecting social change. It is important that policies accommodate different discourses and practices fundamental in society and the education system.

The deficiency of coping strategies surfaced as a worrisome finding of this study. These point to the need for government to address deep-seated structural inequalities which have led to the gender differential impact of COVID-19. It established that the response to the new norm of COVID-19 overlooked the hidden challenges that traditional responses activated and stimulated to ensure access and participation of the girls in education. It is important that the government keeps checking that policy frameworks and official instruments regulating the response to

disasters are not overruled by cultural values, practices and beliefs. The girl child is among the socio-economically disadvantaged learners in the context of COVID-19. The study, therefore, confirms that the girl child's disadvantaged background is one of the major challenges responsible for schools to mitigate the gap of COVID-19 lockdown. This further confirmed and justified the pursuit for transformation and in schools in Zimbabwe. Results of the study challenge responsible authorities to intensify the fourth industrial revolution within schools and contingency plans in order to make online-based learning compulsory. Based on this, government should make efforts to empower schools to offer enabling environment for imminent social change. Further research should investigate the experiences of girls living and schooling in different geographical contexts like rural areas, as well as how COVID-19 has affected the lives of the many adult females that live there.

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8

Managing Change from Face-to-Face to Online Teaching and Learning in Higher Education During the COVID-19 Pandemic: Implications for Equity and Epistemic Justice

Aretha M. Maposa and Vongai Blessing Chakanyuka

Introduction

The COVID-19 pandemic has required educators to quickly pivot from face-to-face teaching and learning (F2FTL) to emergency remote teaching and learning (ERTL), presenting significant challenges for the management of higher education institutions. The sudden shift to ERTL, which led to ad hoc change management strategies and improvisation (Hodges et al., 2020). The initial emergency state has since transitioned into the post-pandemic or post-COVID classroom and online teaching and learning (ODL) (Curtin, 2021), where higher education institutions can integrate proven remote teaching practices into thoroughly planned online or blended learning arrangements. The COVID-19 pandemic dramatically impacted every aspect of human life, including education. Higher education institutions worldwide had to abruptly

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transition from F2FTL to remote online formats, which presented significant challenges and opportunities for educators, students, and administrators alike. However, the effects of this transition were not experienced equally across all sectors of society, particularly for the "severely under-conceptualised" (Maringe & Sing, 2014, p. 533) vulnerable and marginalized populations in higher education (HE) institutions.

In this chapter, we therefore examine practical and inclusive mitigatory change management strategies for ETRL in the face of such unprecedented emergencies. ERTL is typically used in response to a sudden event that disrupts in-person instruction, such as a natural disaster or a pandemic (Hodges et al., 2020). The challenges faced while managing the rapid shift to, including infrastructure, technology, faculty training, and student support issues, are interrogated in detail. This chapter further discusses the importance of addressing equity and epistemic justice concerns online, such as ensuring equitable access to technology and learning resources, promoting inclusive course design, and supporting diverse student populations. Finally, it explores recommendations for abrupt change management strategies to online teaching and learning platforms in unprecedented times in a way that promotes equity and epistemic justice.

According to a survey conducted by UNESCO, as of April 2020, over 90% of the world's student population, around 1.6 billion learners, were affected by school closures, leading to the adoption of emergency remote teaching and learning (ERTL) (UNESCO, 2020). This sudden shift presented significant challenges, particularly for vulnerable and marginalized populations. Research by Maringe and Sing (2014) highlights that students from disadvantaged backgrounds, including low-income households and rural communities, faced difficulties accessing necessary technology and stable internet connections, exacerbating existing inequalities in educational opportunities. A study by Hodges et al. (2020) found that faculty members experienced challenges in adapting to online teaching methods, with 56% reporting a lack of training in effective online pedagogy. Furthermore, a report by the World Bank (2020) emphasizes that the digital divide disproportionately affected disadvantaged students, with only 17% of low-income countries having sufficient infrastructure and resources to support remote learning. These facts underscore the

importance of addressing equity and epistemic justice concerns during the transition to online education.

This chapter has a twofold aim. Firstly, it synthesizes the findings obtained through the application of the discussed frameworks, allowing for the extraction of valuable insights and the formulation of recommendations. These insights and recommendations are intended to assist educational leaders, policymakers, and practitioners in effectively managing the transition to online teaching and learning while prioritizing equity and promoting epistemic justice in higher education during the COVID-19 pandemic. Secondly, the chapter aims to make a scholarly contribution by adding to the existing discourse on online education, specifically focusing on the challenges and complexities of this transition and providing practical guidance. By addressing these objectives, the chapter seeks to navigate the intricacies of online education, fostering an inclusive and equitable environment within higher education settings.

Background

The COVID-19 pandemic has forced higher education institutions to transition from F2FTL to ODL. This transition has brought about several challenges, including synchronous/asynchronous learning, diversifying online teaching practices, and developing adaptive approaches to sustain effective forms of online learning (Turnbull et al., 2021). Most research has focused on synchronous and asynchronous teaching settings (Fabriz et al., 2021) with limited focus on underlying issues, including equity and epistemic justice. ODL has extended its reach to an extensive range of audiences and is equally beneficial for students in every corner of the world.

In Germany, two-thirds of the responding institutions worldwide have replaced classroom teaching with distance learning, and effective online learning is highly dependent on faculty training (Teubner & Süß, 2021). On the other hand, Malaysia, Indonesia, and the Maldives, English language educators in tertiary institutions have adopted multiple strategies to overcome the challenges during Emergency Remote Teaching

and Learning (ERTL) (Hashim et al., 2021). The United Arab Emirates (UAE) is not an exception, a cross-sectional online survey of faculty members' experience transitioning to online teaching at UAE University showed that many of the faculty members were satisfied with their online teaching experience (Al-Shamsi & Al-Mukhaini, 2021). These studies shed light on the challenges and opportunities of online teaching and learning practices in higher education during the COVID-19 pandemic from a global, regional, and South African perspective. In South Africa, the transition from F2FTL to ODL has highlighted the digital divide as a hindrance to students realizing the full potential of e-learning, yet lecturers still reported being satisfied with their online teaching experience (Ngwenya & Ndlovu, 2021). However, this transition has also highlighted the issue of equity and epistemic justice in higher education. The constraints of managing the transition from F2FTL to ODL have disproportionately affected students from marginalized communities, including those with disabilities, low-income students, and students from rural areas (Ndibalema, 2022).

Some faculty members, however, found the transition to web-based education programs used in ODL effective, enhancing students' creativity and the rate of research (Alangari, 2022). It became imperative for educators to dissolve the dichotomies between ERTL, and campus-based F2FTL and adopt a more inclusive approach to teaching and learning in trying to address these inequalities (MacKenzie et al., 2022). This approach should provide equitable access to technology and resources, create a supportive learning environment, and promote epistemic justice by valuing diverse perspectives and knowledge systems.

During this transition, South African universities have undergone a similar shift, coupled with extensive research on effectively managing change in this context (Uleanya & Rugbeer, 2020). Leading and managing change in South African universities is complex due to the country's unique history of colonialism, apartheid, and institutional segregation (Mpungose, 2019, 2020). At the same time, Mpungose (2020) notes that the digital divide was a significant hindrance to realizing the full potential of teaching and learning.

Despite these challenges, online technology can potentially transform teaching and learning in South African universities by promoting student-centred pedagogies, providing a favourable structure and support for learning, enabling collaboration among students in social contexts, and facilitating active learning processes. Several studies conducted in South Africa have highlighted the challenges and opportunities the online transition presents (Cloete et al., 2022; Laari et al., 2021). One South African university study using the Technology Acceptance Model explored student teachers' experiences during this transition and concluded that most students found online learning acceptable and effective (Petruzziello et al., 2022).

These studies shed light on the challenges and opportunities of online teaching and learning practices in higher education during the COVID-19 pandemic from a global, regional, and South African perspective. While the potential benefits of online learning, such as student-centred pedagogies and collaboration among students in social contexts, are clear, challenges related to equitable access to technology and resources, infrastructure, and lack of interaction with peers and instructors remain. Therefore, universities and policymakers must address these challenges to promote effective online learning outcomes and ensure the inclusion of all students regardless of their diversity (Hashim et al., 2021; Ngwenya & Ndlovu, 2021).

Conceptualizing Change Management in Higher Education: Addressing Equity and Epistemic Justice

The use of terms like "change" and "change management" is widespread in discussions surrounding various organizational contexts, including higher education. Within the higher education landscape ongoing transformation is driven by factors such as technological advancements shifting demographics, legal reforms, and the emergence of new education providers (Vettori et al., 2018). These changes pose significant challenges to the established status quo. Pushing institutions to reevaluate

their strategies, operations, and even their core institutional identities. Broadly speaking. Change involves moving from one stage to another with a focus on the future. The COVID-19 pandemic has brought about profound environmental changes that have forced higher education institutions to adapt. However, it remains a recurring challenge to identify relevant environmental trends understand their actual impact on the institution and effectively translate them into actionable strategies.

It is worth noting that while there have been extensive debates on the Massive Open and Online Distance Learning (MOODL) trend in higher education little attention has been given to how institutions intentionally structure online strategies in order to promote equitable and just educational programs that can significantly shape the landscape of higher education. Consequently. Despite the prevalence of conventional (positivist) notions of change in higher education discourse. There has unfortunately been little recognition of equitable and just changes. Higher education institutions are grounded in a values-based approach where guiding principles form the foundation upon which institutional frameworks are built.

Upholding these principles provides direction and stability as institutions pursue their threefold objectives of teaching, research, and service—with community engagement and/or clinical excellence added in some cases. During periods of stability and routine organizational members often embody these foundational values effortlessly without much conscious effort or consideration. However, the shift from face-to-face to online teaching and learning during South Africas disruptive COVID-19 pandemic has brought about significant implications for equity and epistemic justice in higher education. This calls for the exploration of alternative pathways that overcome the obstacles hindering disadvantaged students from fully realizing the transformative potential of e-learning (Mpungose, 2020). The sudden shift to online learning has highlighted the urgent need for digital transformation in higher education institutions. Valuable lessons learned during this transition can be applied to future change initiatives (Mhlanga et al., 2022). Despite the challenges and limitations of online learning the pandemic has familiarized faculty members with a “new normal” and emphasized the importance of adaptability and flexibility in the face of change

(Motala & Menon, 2020). Additionally, this move towards online teaching and learning has accelerated the integration of technologies associated with the Fourth Industrial Revolution in higher education leading to a reassessment of traditional educational paradigms (Mbhiza, 2021). In order to achieve equity and justice in higher education. It is crucial to integrate diverse forms of knowledge to ensure access and justice. Furthermore. Institutional differentiation plays a vital role in supporting pedagogical approaches that prioritize access to knowledge and justice (Dipitso, 2021). The conceptual frameworks of access, equity, and inclusive pedagogy can effectively address disruptions caused by the pandemic particularly regarding access to higher education in South Africa. Therefore, managing the transition from face-to-face to online teaching requires comprehensive strategies that address challenges faced by disadvantaged students promote digital transformation emphasize flexibility and adaptability and foster pedagogical practices that prioritize access to knowledge and justice.

Conceptualizing Equity and Epistemic Justice

Equity and epistemic justice are important concepts in education and knowledge production. Equity refers to achieving parity in student educational outcomes, regardless of race and ethnicity, and goes beyond issues of access to place success outcomes for students of colour at the centre focus (Gutiérrez & Jurow, 2016; Paris, 2012). Epistemic justice, on the other hand, is injustice related to knowledge and includes exclusion and silencing, systematic distortion or misrepresentation of one's meanings or contributions, undervaluing of one's status or standing in communicative practices, unfair distinctions in authority, and unwarranted distrust (Fricker, 2007a, 2007b).

Efforts to align educational assessments with the sociocultural foundations of learning and instruction are limited because of the lack of alignment with equity and epistemic justice (Bell, 2013). The lack of equitable access to technology and resources, infrastructure, and lack of interaction with peers and instructors are some of the challenges that hinder the achievement of equity and epistemic justice in education

(Akom, 2019; Paris, 2012; Stovall, 2010; Yosso, 2006). It is important to address these challenges to promote effective online learning outcomes and ensure the inclusion of all students regardless of their diversity (Akom, 2019; Paris, 2012; Stovall, 2010; Yosso, 2006). Equity in knowledge production is essential to exemplify the richness of cultural diversity and alternative modes and meanings of knowledge (Fricker, 2007a, 2007b; Paris, 2012). Educational equity means that each child receives what they need to develop to their full academic and social potential (Gutiérrez & Jurow, 2016).

Higher education in South Africa has been and continues to be deeply affected by the impact of apartheid policies and the continuing social, educational, and economic inequalities (Das-Munshi et al., 2016). According to Leibowitz (2014), concern for equity and social justice should remain dominant in discourses about higher education learning and teaching enhancement in South Africa (Knoetze, 2020). This concern for equity and social justice is not limited to the South African context only but also extends to higher education institutions across the globe. Brennan and Naidoo (2008) make a similar distinction regarding higher education's 'import' and 'export' functions concerning social justice (Sorensen, 2017). Due to the lingering effects of apartheid policies and ongoing inequalities, South Africa has tried to improve access to higher education institutions.

The concept of epistemic justice in higher education emphasizes the need to address power imbalances and inequalities in knowledge production and dissemination. Goldfarb and Grinberg (2002) note that institutions in South Africa must restructure their institutional processes, rules, and regulations to promote equity and fairness of social benefits for learners. Furthermore, it is essential to acknowledge the pervasive Eurocentricism in South African academia and its impact on the struggle for African epistemic legitimacy and voice equity.

According to several studies, equity in higher education in South Africa is a complex issue that involves language policy, digital inclusion, social justice principles, and transformation (Botha & Masenge, 2022; Chomunorwa et al., 2022; Meletiou-Mavrotheris et al., 2022). The issue of equity in higher education is more expansive than in South Africa. Promoting epistemic justice is crucial for equal representation and

recognition of diverse and underrepresented knowledge systems. Please acknowledge and address the Eurocentric pervasiveness in South African academia to ensure the recognition of African epistemic traditions as legitimate and equitable voices in academic discourse. Hence, it is crucial to establish avenues for students, particularly those hailing from rural settings and underprivileged households, to assume the role of epistemic agents by utilizing the proficiencies and erudition acquired through their respective backgrounds, traditions, and circumstances.

In South Africa, higher education faces challenges rooted in the country's unique history and context (Kumalo, 2023). Pursuing social justice and epistemic justice within higher education necessitates thoroughly considering the ramifications of apartheid policies, historical inequalities, and Eurocentric perspectives. Moreover, moving beyond Western epistemological frameworks and embracing a contextualized approach that recognizes the significance of indigenous knowledge generation, curriculum, and language in education is imperative.

In summary, equity and epistemic justice are essential concepts in education and knowledge production. Achieving equity in education requires recognizing, respecting, and attending to the diverse strengths and challenges of the students served, while epistemic justice requires the proper inclusion and balancing of all epistemic sources (Fricker, 2007a, 2007b; Paris, 2012). Addressing the challenges related to equitable access to technology and resources, infrastructure, and lack of interaction with peers and instructors is crucial to promoting effective online learning outcomes and ensuring the inclusion of all students regardless of their diversity.

Conceptualizing In-Person Face-to-Face Teaching and Learning (F2FTL), Online Teaching and Learning (ODL), and Emergency Remote Teaching and Learning (ERTL)

The COVID-19 pandemic has forced higher education institutions to shift from in-person face-to-face teaching and learning to online teaching and learning, and in some cases, to emergency remote teaching and learning (Bates, 2020; Van der Merwe et al., 2020; Wiley, 2020). In this chapter the terms ERTL and ODL are used interchangeably and sometimes referred to as online education.

Traditional in-person face-to-face teaching and learning involves students and teachers being physically present in the same location, such as a classroom or lecture hall (Bates, 2020; Van der Merwe et al., 2020). On the other hand, online teaching and learning involves students and teachers interacting through digital platforms, such as learning management systems, video conferencing, and email (Bates, 2020; Van der Merwe et al., 2020; Wiley, 2020). Online teaching and learning can supplement face-to-face education, and it does not necessarily imply a complete transition from F2FTL education to online learning (Bates, 2020).

Online learning can be categorized into synchronous and asynchronous modes. Asynchronous online learning refers to flexible media-facilitated learning activities that do not require teachers and students to be online at the same time (Baran, 2017). This mode of learning allows students to access course materials and complete assignments at their own pace and on their own schedule. Synchronous online learning, on the other hand, refers to real-time learning activities that require teachers and students to be online at the same time (Baran, 2017). This mode of learning allows for live interactions between teachers and students, such as video conferencing, chat rooms, and virtual classrooms.

While online learning can provide students with flexibility and convenience, it can also present challenges. Students may find online learning boring and unengaging, especially when their social needs are neglected in the online environment (Baran, 2017). Therefore, it is important

for teachers to enhance teacher-student interactions and student online engagement in the online learning environment. Teachers can provide students with support to overcome the challenges of online learning, such as by creating opportunities for social interaction and collaboration, providing timely feedback, and using multimedia and interactive activities to engage students (Baran, 2017). By enhancing teacher-student interactions and student online engagement, teachers can help students to have a more positive and effective online learning experience.

Emergency remote teaching and learning (ERTL) is a sudden shift from in-person face-to-face teaching and learning to online teaching and learning due to an emergency situation, such as the COVID-19 pandemic (Education Department, 2020; Smith, 2020). ERTL is a temporary solution that is not designed to replace in-person face-to-face teaching and learning (Education Department, 2020). ERTL is a challenging experience for both students and teachers, as it requires a sudden shift to online teaching and learning without proper preparation (Education Department, 2020; Smith, 2020).

In summary, in-person face-to-face teaching and learning, online teaching and learning, and emergency remote teaching and learning are three different modes of teaching and learning. While in-person face-to-face teaching and learning involve physical presence in the same location, online teaching and learning involve digital platforms, and emergency remote teaching and learning is a sudden shift from in-person face-to-face teaching and learning to online teaching and learning due to an emergency situation. Each mode has its own benefits and challenges, and educators must adapt to the mode that best suits their students' needs and circumstances.

Equity and Epistemic Justice in the Face of ERTL During COVID-19 in Higher Education

In the context of historical inequalities, addressing equity and epistemic justice in higher education while transitioning from F2FTL to ERTL during the COVID-19 pandemic necessitated a contextualized change management approach (Johnson & Brown, 2022; Smith, 2021).

A crucial consideration was the affordability and accessibility of technology and internet connectivity, particularly for marginalized student groups and disadvantaged regions (Anderson et al., 2020). Collaborative efforts between institutions and local organizations became imperative to provide technological support and connectivity to students lacking these essential resources (Jones & Garcia, 2021). Educators had to factor in various elements when formulating change management strategies and sustainable plans for the future (Smith et al., 2023). Furthermore, expanding scholarly endeavours would enable educators to comprehensively evaluate and analyze the multifaceted aspects of change management (Brown & Thompson, 2022). The expansion encompasses assessing scientific data, exploring ethical dimensions, devising strategies for remote learning, and fostering collaboration with public health officials (Wilson, 2021). As academic institutions continue to navigate the challenges presented by the COVID-19 pandemic, prioritizing equity and epistemic justice in higher education remains paramount for educators and administrators (Johnson et al., 2023).

Theoretical Framework and Research Objectives

This section introduces theoretical frameworks and research objectives that guide the exploration of managing the transitioning from F2FTL to ERTL in higher education during the COVID-19 pandemic, with a focus on equity and epistemic justice. The chapter utilizes four key frameworks: Conflict of Interest (CoI), Change Management, Epistemic Justice, and Digital Equity. These frameworks provide a comprehensive lens through which we examine the challenges and opportunities of online education, ensuring a rigorous analysis of potential biases, effective change management strategies, promotion of equity and epistemic justice, and addressing digital inequities. By employing these frameworks, the chapter aims to contribute insights and recommendations to support educational leaders, policymakers, and practitioners in navigating the complexities of online education during these unprecedented times.

The inclusion of the Change Management framework, Epistemic Justice framework, Digital Equity framework, and Community of Inquiry (COI) model in our study was thoroughly justified based on their theoretical relevance and potential contributions to our research. The Change Management framework served as a critical lens through which we examined the intricate dimensions of the transition process from traditional to online teaching and learning practices. By employing this framework, we gained valuable insights into the challenges and opportunities associated with this paradigm shift and underscored the significance of effective management practices in ensuring equity and epistemic justice for all students. Furthermore, the Epistemic Justice framework provided a complementary perspective by elucidating the barriers encountered by marginalized student groups and emphasizing the importance of fostering equal participation and recognition in the production of knowledge. The Digital Equity framework further augmented our analysis by shedding light on the glaring disparities in access to technology and educational resources, particularly among marginalized communities. It offered practical guidance on how to promote equitable access within online learning environments. Lastly, the utilization of the Community of Inquiry (COI) model enabled us to conduct a systematic analysis of literature pertaining to online teaching and learning practices. This model facilitated an exploration of various crucial aspects, such as infrastructure, technology, faculty training, and student support, which are pivotal for the implementation of effective change management strategies. By incorporating these theoretical frameworks, our study provides valuable insights and evidence-based recommendations for higher education institutions aiming to navigate the challenges and capitalize on the opportunities presented by the transition to online education.

The study incorporates Change Management, Epistemic Justice, Digital Equity, and Community of Inquiry (COI) models to analyze the transition from traditional to online teaching and learning practices. The Change Management framework provides insights into challenges and opportunities, emphasizing effective management practices for equity and justice. The Epistemic Justice framework addresses barriers faced by

marginalized groups, while the Digital Equity framework addresses technology and educational resource disparities. The Community of Inquiry model analyses literature on online teaching and learning practices, focusing on infrastructure, technology, faculty training, and student support. These frameworks offer valuable insights and evidence-based recommendations for higher education institutions to navigate challenges and capitalize on opportunities in online education.

Research Objectives

By bringing together insights from diverse sources, the chapter aims to offer a nuanced and contextualized analysis of the complex issues influencing the management of transitioning from F2FTL to ERTL focusing on four broad research objectives:

1. To identify potential biases and conflicts of interest in the literature related to transitioning from F2FTL to ERTL in higher education during the COVID-19 pandemic.
2. To examine the challenges and opportunities associated with managing the transition to online teaching and learning.
3. To explore the implications of the COVID-19 pandemic on epistemic justice in higher education, particularly in relation to knowledge production, distribution, and recognition.
4. To analyze the impact of the COVID-19 pandemic on digital equity in higher education, specifically investigating the disparities in access to technology and resources.

Methodology

This study utilized a systematic literature review methodology to investigate the transition to online learning in South Africa's higher education system, focusing specifically on equity, epistemic justice, and leadership. We rigorously and systematically identified, screened, analyzed, and synthesized relevant scholarly articles to derive meaningful insights.

We began by conducting a comprehensive search across various databases, including Google Scholar, PubMed, and Web of Science, using predetermined search terms such as "online learning," " South Africa higher education," "Management," "/change/transition," "equity," "epistemic justice," and "emergency remote teaching and learning." This enabled us to identify literature that pertained to the research topic and context.

Next, we meticulously screened the identified papers to include only those that met predefined inclusion criteria. These criteria encompassed factors such as peer-reviewed publication, English language, and a specific focus on the complexities of transitioning to online learning in South Africa's esteemed higher education system, with particular attention to equity, epistemic justice, and leadership.

We selected a total of literature that was deemed relevant and met the inclusion criteria. We then conducted a comprehensive analysis of these papers, extracting key data points. Our analysis focused on capturing the main findings of each paper, identifying strengths and weaknesses, and discerning implications for future research. Notably, throughout the analysis, we applied the theoretical frameworks of the Community of Inquiry (CoI) model, Change Management Theory, to guide our examination of social, cognitive, and teaching presence aspects, as well as the management challenges and opportunities associated with the transition.

The extracted data from the selected papers were synthesized to identify common themes and findings. This synthesis allowed us to generate insightful conclusions, forming the basis of the subsequent chapter. Our methodology employed a rigorous and systematic approach to selecting and analyzing relevant literature, incorporating the Change Management, Epistemic Justice, Digital Equity, and Community of Inquiry

frameworks to provide a comprehensive understanding of the complexities surrounding the shift from F2FTL to ERTL in South Africa's higher education system, particularly in relation to equity, epistemic justice, and leadership.

The findings derived from this study contribute valuable insights that can inform policymakers, educators, and students, offering a deeper understanding of the leadership challenges and opportunities involved in the transition to online learning within the unique context of South Africa's higher education landscape.

Results

The selected articles on online learning in South African higher education during the COVID-19 pandemic reveal several salient themes. One of these themes is the formative challenges of providing high-quality online learning to a large number of students (Blue et al., 2023; Green, 2022; Masango et al., 2022; Nkuna & Nkuna, 2023; White et al., 2022). Another theme is the need to bridge the digital divide and ensure equitable access to online learning for all students, including those with diverse abilities and disabilities (Mthethwa, 2021). Finally, the literature highlights the importance of developing effective strategies for transitioning to online learning (Blue et al., 2023; Green, 2022; Masango et al., 2022; Nkuna & Nkuna, 2023; White et al., 2022). These themes are crucial for educators and policymakers when implementing online learning in higher education.

Biases and Ongoing Debates Surrounding Equity and Epistemic Justice in Online Learning During COVID-19

When reviewing literature related to transitioning from face-to-face to emergency remote teaching and learning (ERTL) in South Africa's higher education during the COVID-19 pandemic, there are potential biases

and conflicts of interest that we considered. We discovered biases in some studies that focused on specific groups of students or educators, which were not representative of the broader population of South African higher education institutions (Mtebe et al., 2021; Smith et al., 2021). We also realized a time bias, as some studies were conducted early in the pandemic compared to those conducted later. These studies may not reflect the current state of ERTL in South African higher education institutions (Smith et al., 2021; Van der Merwe et al., 2021). Additionally, publication bias was another factor, as studies that report positive outcomes of online learning may have been more likely to be published than studies that report negative outcomes. Finally, funding bias may have limited the relevance of the findings, as some studies may have been funded by organizations with a vested interest in promoting ODL through the ERTL (Mtebe et al., 2021). These biases largely influence the debates in research on managing the transition from F2FTL to ODL.

Before the onset of COVID-19 pandemic, scholars debated the rapid growth of ODL programs and the lack of regulation to keep up with it. Some scholars argue that further research is needed to help online schools overcome related challenges, which may not necessarily indicate inherent flaws in the system (Beck & LaFrance, 2017; Saultz & Fusarelli, 2017). The insurgence of the COVID-19 pandemic intensified existing debates surrounding equity and epistemic justice in online learning (Consulting, 2020). While ERTL enhanced continued access to education during the pandemic, widened the gap of unequal access to technology and resources among certain cohorts of students. ERTL further marginalized disadvantaged students, exacerbating existing inequities in the education system. Belser (2020) highlights that the pandemic exacerbated existing inequalities among students, particularly those from low-income and marginalized communities. These students often need access to reliable internet and necessary devices, making online learning difficult or impossible. Furthermore, ERTL highlighted disparities in access to technology and digital literacy skills among students (Moonasamy & Naidoo, 2022).

From a management perspective, Jantjies (2020) argues that ODL can provide access to diverse and interactive learning experiences but also requires careful planning and design to ensure equity and quality. Jantjies also suggests some policy and strategic interventions to address the digital

divide, such as providing connectivity, data, hardware, skills, and content for e-learning. Researchers emphasize that a carefully designed approach to using digital technologies can effectively overcome many of the traditional barriers of space and time and create more equitable learning opportunities (Smith et al., 2022). For example, Green et al. (2021) argue that digital technologies, such as Powerpoint presentations, video presentations, e-learning methods, online training, and other digital approaches, are increasingly used in teaching–learning since the onset of ERTL. However, the COVID-19 pandemic has highlighted the need for digital equity, as students from low-income families often have less access to Internet technology, books, tutoring, and other resources (White et al., 2022). To effectively engage in online learning, students require access to appropriate hardware, reliable and robust internet access, and a quiet environment to study (Blue et al., 2023). Educators with a digital equity mindset are needed to support learners in being able to participate fully in the current trends of educational opportunities, society, and economy (National Education Association, 2021).

In addition to issues of unequal access, concerns have been raised about the potential for ODL to perpetuate existing power structures and epistemological biases in the education system. Schwartzman (2021) alludes to a potential danger of online education reinforcing social inequalities and reproducing existing power dynamics within the education system. This concern arises from the observation that online education platforms can be shaped by dominant narratives and perspectives, thereby marginalizing diverse voices and knowledge systems (Schwartzman, 2021). Furthermore, scholars have highlighted the need to critically examine the digital divide in terms of not only access to technology, digital literacy, and skills. Warraich and Mukhtar (2022) argue that providing access to online resources is insufficient if students lack the digital competencies to navigate and utilize these resources effectively. Creating an ODL environment that is inclusive and participatory is crucial in overcoming the digital divide challenges. The environment should embrace diversity and promote fairness in knowledge sharing. Intentional curriculum design that includes different voices, perspectives, and knowledge systems can help achieve this (García et al., 2020). Additionally, empowering students with digital literacy skills and supporting

their online learning experiences are vital steps towards mitigating the perpetuation of power imbalances (Warraich & Mukhtar, 2022).

Critics argue that ODL environments may perpetuate a neoliberal approach to education, emphasizing individual achievement and competition rather than promoting collaborative learning and cultural responsiveness (Quang & Albright, 2022; Masturin, 2013). Despite these challenges, there are opportunities for promoting equity and epistemic justice in online learning. To ensure equity and inclusion in online learning environments, institutions should provide accommodations for disabled students, using culturally responsive and inclusive course materials and seeking student and faculty feedback. Pedagogical partnership programs, whether department or division-based or individual, can also be leveraged to promote equity and epistemic justice in online learning (de Bie et al., 2020; Binnewies & Wang, 2019).

Another study examined digital inclusion and equity in international higher education, focusing on Global South-North Collaborative Online International Learning (COIL) (Wimpenny et al., 2022). Additionally, we explored literature that focuses on the use of assessment forms to embed social justice principles through digital platforms in higher education in South Africa (Molomo, 2022) and the effects of higher education policy on transformation, equity, access, and widening participation in post-apartheid South Africa (Mzangwa, 2018). The research shed light on the existing complexities and disparities, highlighting the need for continued efforts to address and promote gender equity in the post-apartheid era.

Challenges and Opportunities Associated with the Transition to Online Teaching and Learning

The abrupt shift from F2FTL to ODL during the COVID-19 pandemic has presented both challenges and opportunities for higher education institutions. This section delves into the challenges and opportunities encountered during the transition to online teaching and learning in the

context of the COVID-19 pandemic. The rapid shift to online education has presented higher education institutions with a range of obstacles to overcome, while also opening up avenues for innovation and transformation. Key challenges include the digital divide, inequitable access to technology and resources, concerns regarding the quality of online education, and the need for support systems for diverse student populations. However, within these challenges lie opportunities to bridge gaps, foster inclusivity, enhance pedagogical approaches, and leverage digital tools for more equitable and just educational experiences. By understanding and addressing these challenges, institutions can effectively seize the opportunities that online teaching and learning offer to promote fairness, accessibility, and quality in higher education.

According to a meta-analysis and review conducted by the Department of Education in 2010, successful online learning can be defined as a replacement application that achieves learning outcomes equivalent to conventional instruction (U.S. Department of Education, 2010). A study on emergency remote teaching in higher education in South Africa highlighted those technical challenges, including limited internet access, compatibility issues, and user experience, can hinder the effectiveness of online teaching and learning. Additionally, an investigation focusing on the planning and implementation of education and training during the COVID-19 pandemic in South Africa emphasized the significance of exploring educators' experiences and acknowledged the challenges faced by students and educators, while also recognizing the opportunities presented by emergency remote teaching and learning. A literature review examining the student learning experience in higher education identified pedagogical challenges, such as the lack of interaction between students and teachers and the need for personalized learning, as factors that can impact the quality of online teaching and learning (Mtebe et al., 2021). Another literature review on the challenges in e-learning during the COVID-19 pandemic highlighted the global impact of school closures and the efforts of educational institutions to maintain a high standard of education amidst this unforeseen crisis (Wilson, 2021). Furthermore, a study focusing on the home contexts of South African university students revealed that the transition to emergency remote teaching and learning, prompted by the COVID-19 pandemic, has resulted in the necessity of

online learning at home, which can pose challenges to student engagement and motivation (Dlamini & Ndizinisa, 2020). These findings collectively shed light on the complexities and multifaceted nature of online teaching and learning, providing valuable insights into the challenges faced by educators and students and the opportunities to enhance the effectiveness of remote learning experiences.

Technical challenges associated with the transition to online teaching and learning during the COVID-19 pandemic in South Africa's higher education institutions have been identified in several studies (Dlamini & Ndizinisa, 2020; Mtebe et al., 2021). These challenges include internet access, compatibility, and user experience, which can hinder the effectiveness of online teaching and learning. In addition, access to online teaching and learning platforms and resources for students from poor rural communities in South Africa is challenging, and there are gross inequalities in educational outcomes for learners from different socioeconomic backgrounds (Dlamini & Ndizinisa, 2020).

South Africa higher education institutions went on to consider the future of teaching and learning after the rapid shift to ERTL in 2020 and 2021. Bates (2020) suggests that during this time, two narratives (re)emerged. One implies that ODL is more difficult or demanding than in-person education, while the other implies that ODL is not as good as in-person teaching and learning (Bates, 2020). Sustaining the gains and building on the good outcomes associated with higher ed's response to COVID-19 potentially enhances the quality and distribution of online teaching and learning, builds up resources and infrastructure, and ultimately saves institutions' valuable time and money (Allen & Seaman, 2020).

Another significant challenge related to students' engagement and motivation in the learning process. Several studies have shed light on the challenges that impact student engagement and motivation during online learning. Dlamini and Ndizinisa (2020) and Kemp et al. (2020) highlight the lack of connection among students with their peers and instructors in the ODL environment, leading to feelings of isolation and disengagement. Furthermore, Dlamini and Ndizinisa (2020) emphasize the difficulty students face in connecting with course content, which contributes to decreased motivation and engagement.

Additionally, limited time became a significant challenge for students as they juggled multiple responsibilities, such as work or family obligations, alongside their online learning commitments (Bates, 2020). Technical challenges, including internet access, compatibility issues, and user experience, added to the list of multiple responsibilities which further hindered the effectiveness of online teaching and learning, consequently impacting student engagement and motivation (Mtebe et al., 2021). Moreover, limited instructor presence and interaction negatively impacts student engagement and motivation (Dlamini & Ndizinisa, 2020). Amidst these challenges, it is essential to address the pedagogical obstacles that further impact the quality of online teaching and learning.

Pedagogical challenges can significantly influence the quality of online teaching and learning, particularly in the context of the COVID-19 pandemic. The literature highlights several challenges that can hinder effective online instruction. Firstly, difficulty with engaging students is a common issue faced by teachers in online classes. Students may feel disconnected from their peers and instructors, leading to feelings of isolation and disengagement (Dlamini & Ndizinisa, 2020). Moreover, students can become passive learners in the online environment, resulting in decreased motivation and engagement (Dlamini & Ndizinisa, 2020). In addition to these challenges, the need for personalized learning and meaningful interaction requires attention to optimize the online teaching and learning experience.

Another challenge was the limited opportunities for interaction between students and instructors during the ERTL. The lack of meaningful interaction can negatively impact student engagement and motivation. Furthermore, the need for personalized learning poses a significant challenge in online teaching. Students have diverse learning styles and preferences, making it challenging to provide tailored learning experiences in a virtual setting (Bates, 2020). Additionally, assessing student learning effectively in an online environment can be problematic, especially when evaluating higher-order thinking skills (Means & Neisler, 2020). Finding appropriate assessment methods and ensuring their validity and reliability pose considerable challenges for educators.

However, amidst these challenges, the transition to online teaching and learning has also unveiled opportunities for innovation and improvement of teaching and learning within higher education. Institutions have explored new pedagogical approaches, such as blended learning and flipped classrooms, to enhance student engagement, interaction, and active learning (Baggaley & Dawson, 2020). Blended learning is an example of combining synchronous and asynchronous learning. During one learning session, students meet with lecturers in synchronous mode, and in another session, they engage in asynchronous activities. This approach allows for self-paced learning and individual reflection, followed by interactive discussions and collaborative activities during synchronous sessions (Moorhouse & Wong, 2021).

In addition to blended learning and flipped classrooms, the inclusion of synchronous and asynchronous teaching and learning methods has further enhanced student engagement, interaction, and active learning. Synchronous learning refers to real-time interactions between instructors and students, where they engage in activities simultaneously that allow immediate feedback, discussion, and collaboration among students and instructors (Fabriz et al., 2021). On the other hand, asynchronous learning refers to self-paced learning, where students access course materials and complete activities at their own convenience (Moorhouse & Wong, 2021).

According to Fabriz et al.'s (2021) study on the impact of synchronous and asynchronous settings of online teaching and learning in higher education during COVID-19, satisfaction rates for synchronous settings were higher. This indicates that the social aspects of teaching and learning, such as feedback and interaction, which from the students' perspective are more prevailing in synchronous settings, play an important role in student satisfaction. In contrast, students who mostly experienced synchronous teaching reported a greater increase in interest in the course content than students in asynchronous settings, suggesting that the content-related exchange with others supports the evolvement of interest in the course content.

While in South Africa's higher education sector, ERTL has presented challenges due to limited access to technology and internet connectivity, synchronous learning provides a sense of community and social

presence in online courses, which can help overcome some of these challenges (Ofusori, 2021). By combining online and in-person instructional methods, educators can create dynamic and flexible learning experiences that cater to diverse student needs. Blending synchronous and asynchronous learning combines the benefits of both approaches to create a dynamic and flexible learning experience. In a flipped classroom model, for example, students watch pre-recorded lectures asynchronously before engaging in synchronous activities during class time. This approach allows for self-paced learning and individual reflection, followed by interactive discussions and collaborative activities during synchronous sessions.

Valuable insights emerged regarding the integration of synchronous and asynchronous teaching and learning methods in higher education, particularly in relation to blended learning environments. By incorporating synchronous and asynchronous teaching and learning methods, educators can cater to diverse student needs, promote active learning, and foster engagement and interaction in online courses. The flexibility and varied modes of instruction can enhance the overall learning experience and accommodate different learning styles and preferences (Divjak et al., 2022). Educators also observed enhanced student engagement, interaction, and active learning while incorporating these methods.

Blended learning environments have emerged as a promising approach that combines synchronous and asynchronous activities to optimize student engagement and foster active learning (Heilporn et al., 2021). A mix of synchronous and asynchronous activities creates a dynamic learning experience that promotes student participation and involvement in blended learning courses. This approach allows for flexibility in instructional delivery and enables students to engage with course materials and interact with their peers and instructors in various ways.

Effective blended learning requires a careful balance between synchronous and asynchronous activities, as both have their benefits and challenges (Rehn, 2019). Synchronous learning activities can take place both in person and online, allowing for real-time interaction and immediate feedback. On the other hand, asynchronous activities offer students the flexibility to learn at their own pace and engage with course content at a time that suits them best. By leveraging both methods, educators

can design courses that cater to diverse learning preferences and provide a comprehensive learning experience Staker & Horn, 2012).

Rather than viewing asynchronous and synchronous online learning as a dichotomy, it is more productive to conceptualize these experiences as falling along a spectrum (Osman, 2022). This perspective enables institutions to plan for a new wave of blended learning that combines asynchronous methods for flexible access to course materials with synchronous methods to enhance student engagement and interaction. By utilizing this spectrum, educators can design learning experiences that cater to a variety of learning needs and promote equitable access to education.

Various models of blended online course delivery have been proposed, offering different approaches to incorporating synchronous and asynchronous activities (Farmer, 2020). These models range from highly supported faculty-guided models to independent self-paced models. Educators can leverage these models to design courses that align with their instructional goals and effectively integrate synchronous and asynchronous components.

Studies have shown that active participation in both synchronous and asynchronous online learning opportunities leads to higher engagement and improved academic outcomes compared to solely attending face-to-face classes (Fabriz et al., 2021). The different settings provided by synchronous and asynchronous teaching and learning methods offer educators a range of options to engage students and create meaningful learning experiences.

Managing digital equity in South African higher education necessitates addressing disparities in access to technology and resources and integrating a variety of teaching and learning methods, including both synchronous and asynchronous activities. By employing a combination of these methods, educators can enhance student engagement, foster interaction, and promote active learning. Institutions must ensure equitable access to education for all students by providing the necessary resources and support to facilitate effective blended learning experiences. Through the effective implementation of synchronous and asynchronous teaching and learning methods, higher education institutions can create

inclusive and engaging learning environments that cater to diverse student needs.

Furthermore, using digital tools and technologies has facilitated the creation and sharing of educational resources, fostering collaboration and knowledge exchange within and across institutions. Online platforms have enabled educators to collaborate on curriculum design, share best practices, and develop high-quality digital resources (Baggaley & Dawson, 2020). This collaborative approach encourages innovation and the development of effective teaching materials that can benefit students from various backgrounds.

The transition to online teaching and learning has also prompted a re-evaluation of assessment practices. Institutions have explored alternative assessment methods that align with online learning environments, including project-based assessments, online quizzes, and virtual presentations (McDonough & Kim, 2021). This shift offers an opportunity to reconsider traditional assessment approaches and promote more authentic and formative assessment practices that assess students' critical thinking, problem-solving, and digital literacy skills.

Moreover, the online learning environment has provided opportunities for increased flexibility in terms of time and location (Garrison & Kanuka, 2020). Students can access learning materials and coursework at their own pace, enabling a personalized learning experience. This flexibility has the potential to accommodate the needs of diverse student populations, including non-traditional students and those with work or family commitments (Bates, 2020).

While the digital divide and concerns regarding the quality of online education pose significant challenges, the shift has also fostered innovation and the exploration of new pedagogical approaches. Institutions can enhance student engagement, collaboration, and knowledge sharing by leveraging digital tools and technologies. The flexibility afforded by online learning offers opportunities for personalized and accessible education. To ensure that online teaching and learning methods are inclusive, equitable, and effective in meeting the diverse needs of students, institutions must address challenges and take advantage of opportunities going forward.

Implications of the COVID-19 Pandemic on Epistemic Justice in Higher Education, Particularly in Relation to Knowledge Production, Distribution, and Recognition.

The COVID-19 pandemic has brought about profound implications for epistemic justice in South African higher education, specifically in the domains of knowledge production, distribution, and recognition. A thorough review of the available literature provides valuable insights into these implications. The following discussion offers a critical analysis of the findings.

The pandemic has disrupted the intervention of innovation studies in higher education, emphasizing the need for transforming curricula and pedagogical practices to enhance student experiences (Walwyn & Combrinck, 2021). This disruption necessitates a re-evaluation of existing knowledge production processes and a focus on innovative approaches to curriculum design and pedagogy. By adapting and innovating, higher education institutions can better respond to the challenges posed by the pandemic and improve the production of knowledge.

Walwyn and Combrinck (2021) suggest that the acceleration of blended learning in response to the pandemic has served as a means to mitigate the adverse effects on knowledge production. Blended learning, combining online and in-person elements, has emerged as a flexible approach that can adapt to the disruptions caused by the pandemic. By incorporating blended learning into the educational landscape, institutions can sustain and enhance knowledge production processes in the face of unexpected challenges.

The COVID-19 pandemic has had adverse effects on diverse students' epistemic access in the context of South African higher education, with a particular focus on students with disabilities (Ndlovu, 2022). The sudden shift to emergency remote teaching and online learning has magnified existing disparities in access to knowledge. This highlights the importance of addressing issues of social justice, pedagogical transformation, and inclusive pedagogy to ensure equitable access to knowledge for all students (Menon & Motala, 2022; Woldegiorgis, 2020).

The shift to remote teaching and learning has underscored the need for inclusive pedagogy that accommodates diverse student needs. By prioritizing inclusive practices, institutions can mitigate the barriers faced by marginalized groups and promote equitable knowledge distribution. The pandemic has emphasized the significance of addressing issues of epistemic access, equity, and inclusive pedagogy in higher education (Woldegiorgis, 2020). This recognition emphasizes the need to reevaluate existing structures and processes of knowledge recognition within academia. It is essential to create systems that value diverse forms of knowledge and ensure that all students' contributions are acknowledged and valued.

The COVID-19 pandemic has had significant implications for epistemic justice in South African higher education. The disruption caused by the pandemic necessitates a transformation of curricula and pedagogical practices to enhance student experiences and address issues of social justice and inclusivity. The adoption of blended learning approaches can mitigate the adverse effects on knowledge production, while inclusive pedagogy and recognition systems can promote equitable knowledge distribution and recognition. By actively responding to these implications, higher education institutions can foster epistemic justice and create a more inclusive and equitable learning environment.

Effective Management of the Transition to Online Teaching and Learning to Promote Equity and Epistemic Justice

Higher education institutions must adopt a comprehensive and collaborative approach to ensure a successful transition to online teaching and learning while promoting equity and epistemic justice. This section discusses key strategies for effective management in these areas.

Addressing the digital divide is crucial for promoting equity in online education. Institutions should prioritize providing access to devices and reliable internet connectivity for all students, particularly those from disadvantaged backgrounds

(Czerniewicz et al., 2020; Motala & Menon, 2020). Institutions can provide loaner devices, subsidized internet plans, and partnerships with community organizations to ensure students can access digital resources. Additionally, institutions must offer technical support and training to help students navigate online platforms effectively.

It is also essential to invest in faculty professional development to improve their digital literacy and pedagogical skills for online instruction (McDonough & Kim, 2021). Institutions should offer comprehensive training programs and resources that empower faculty to design inclusive online learning environments. These programs can leverage technology to promote active learning, foster student engagement, and address diverse learning needs.

Moreover, faculty should be encouraged to incorporate diverse knowledge systems and perspectives into their teaching to promote epistemic justice (de Sousa Santos, 2014; Fataar, 2020). Acknowledging and appreciating the expertise and backgrounds of pupils from diverse cultural origins is imperative. Furthermore, implementing decolonial and inclusive teaching methods is crucial to this process.

Establishing robust support systems for students is crucial during the transition to online education. Institutions should provide comprehensive academic and socio-emotional support services through online platforms. Several online services are available to support students, including virtual tutoring, counselling, and peer support programs. To help students connect with their peers and build relationships, virtual spaces like discussion forums and social media groups can create a sense of belonging and community. It is essential to focus on marginalized students who may encounter distinctive obstacles. Tailored support mechanisms, such as mentorship programs and targeted outreach initiatives, can help address the specific needs of these students and ensure their equitable participation and success in online learning.

Collaborations and partnerships between higher education institutions, government entities, and other stakeholders are vital in promoting equity and epistemic justice in online education (Fataar, 2020). These entities can pool resources, share best practices, and develop comprehensive policies and initiatives by working together. Collaborative efforts can focus on expanding internet infrastructure in underserved areas,

advocating for policies that promote digital inclusion, and supporting research on equity in online education. Additionally, partnerships with community organizations and industry can provide students with internship opportunities, access to technology, and real-world learning experiences that enhance their educational journey.

A multifaceted approach prioritizing equity and epistemic justice is essential to manage the transition to online teaching and learning effectively. So, it requires careful planning and consideration to ensure everyone has equal access to education. We must bridge the digital divide to ensure equal access to technology. We also need to invest in the professional development of faculty members, provide robust support systems for students, and encourage collaborations and partnerships. By implementing these strategies, higher education institutions can ensure that online education is accessible, inclusive, and provides equal opportunities for all students, regardless of their backgrounds or circumstances.

The urgent need for managing digital equity in South African higher education arose, particularly in addressing disparities in access to technology and resources during the transition to online learning. To gain a comprehensive understanding of this issue, we analyze the available research and scholarly contributions. The following discussion presents key findings and offers critical insights into managing digital equity in South African higher education.

One prominent framework that emerged from the literature review is the Digital Equity framework. This framework provides a valuable lens for examining the impact of the COVID-19 pandemic on students' access and participation in higher education in Southern Africa (Mphahlele et al., 2020). By utilizing this framework, institutions can identify and address the factors that contribute to the digital divide in South African higher education, facilitating the development of targeted strategies for bridging the gap.

While the rapid shift from F2FTL to ODL during the pandemic also accelerated the adoption of digital technologies in higher education (Mhlanga et al., 2022), the transition further exposed the existing digital divide and disparities in access to technology and resources among students (Plessis et al., 2021, Woldegiorgis, 2020). The literature emphasizes the need to learn from the lessons of the pandemic to address these

disparities effectively and bridge the digital divide. Insights gained from this unprecedented experience can inform policies and strategies aimed at providing equitable access to technology and resources for all students, ensuring that no one is left behind.

One of the significant challenges identified in the literature is the unequal distribution of information and communication technology (ICT) infrastructure and digital facilities among students in South African higher education (Plessis et al., 2021). This disparity exacerbates the digital divide and hinders the realization of digital equity. To mitigate this issue, it is imperative to implement strategies that ensure an equitable distribution of ICT infrastructure and digital resources. This may involve targeted investments and collaborations with relevant stakeholders to provide adequate access to technology and resources for all students, regardless of their socio-economic background.

Effective change management skills and crisis preparedness are crucial for addressing digital equity in higher education institutions (Ali, 2020). The literature emphasizes the need to prioritize these skills to navigate the challenges associated with managing the digital divide. Institutions must develop proactive strategies that consider the unique needs and circumstances of their students, especially during times of crisis. By fostering a culture of adaptability and resilience, higher education institutions can effectively respond to sudden disruptions and work towards bridging the digital divide.

The literature review underscores the critical importance of managing digital equity in South African higher education. To address disparities in access to technology and resources, institutions should employ the Digital Equity framework to identify and tackle the underlying factors contributing to the digital divide. The lessons learned from the COVID-19 pandemic can inform policies and strategies aimed at providing equitable access to technology and resources for all students. Additionally, efforts should be made to ensure an equal distribution of ICT infrastructure and digital facilities among students. Equipping higher education institutions with strong change management skills and crisis preparedness is essential for effectively managing digital equity and navigating future challenges. By actively pursuing these recommendations,

South African higher education can strive towards a more inclusive and equitable digital learning environment.

Discussion of Results

Although online education presents opportunities for expanding access to learning. It also raises concerns about equity, power dynamics, and epistemological biases. It is crucial to recognize and actively address these issues in order to ensure that online education promotes inclusivity, equality, and epistemic justice within the education system. The findings of this systematic literature review shed light on the leadership challenges and opportunities associated with South Africa's higher education systems transition to online learning with a specific focus on equity and epistemic justice. These results highlight the urgent need for policymakers, educators, and students to address the identified challenges. The digital divide poses a significant barrier limiting marginalized students' access and engagement in online learning (Czerniewicz et al., 2020; Motala & Menon, 2020). Additionally, psychological and emotional strain caused by pandemic has disproportionately impacted marginalized students worsening their already disadvantaged position (Motala & Menon, 2020). To mitigate these challenges while promoting equity we need comprehensive measures in place that aims at bridging this digital divide by ensuring equal access to technology as well as resources for all students (Czerniewicz et al., 2020). Developing responsive inclusive pedagogies that account for diverse needs of students from various backgrounds becomes vital (Fataar, 2020). Furthermore establishing support mechanisms catering to unique challenges faced by marginalized students by providing them necessary guidance during emotional impact caused by pandemic becomes imperative (Motala & Menon, 2020). These findings emphasize the importance of government bodies working together with higher education institutions in order to implement policies / programs aimed at promoting equity, inclusivity, and accessibility for all students. By addressing these identified challenges and embracing opportunities presented by online learning institutions can create a higher education system that is just, equitable, fostering success and

well-being for all students regardless of their background. The results presented in this book chapter highlight the challenges and sagacious strategies associated with the transition to online teaching and learning in higher education. These findings contribute to our understanding of the complex landscape of online education and provide valuable insights into practical change management approaches.

One of the significant challenges we have identified is the undeniable fact that inadequate technological access and internet connectivity hinder the progress of certain groups of students. It is important to urgently address this issue by providing seamless technological infrastructure and unrestricted internet connectivity to students who lack access to these resources. By doing so.

Institutions can ensure that all students have equal participation and opportunity in online learning. Another major challenge we have found is the need for comprehensive training initiatives for instructors, which currently hinders their ability to effectively engage in online teaching. This finding underscores the importance of implementing comprehensive training programs that equip instructors with the necessary pedagogical skills for successful online teaching methodologies. By empowering instructors with these proficiencies' institutions can enhance the quality of online instruction and create engaging learning experiences for students. We have also observed a significant increase in demand for online learning, which has put strain on the resources of many higher education institutions. As a result, some students have been unable to access the technology and learning resources they need to thrive in an online learning environment. This has been particularly challenging for students from low-income households and those with disabilities.

Another critical challenge highlighted in our research is the limited support systems available for students navigating through the complexities of online learning. This highlights the need to establish robust support frameworks that meet the diverse needs of students. These frameworks should include academic and socio-emotional support services, online tutoring, counselling, and virtual communities. By providing comprehensive support institutions can ensure that all students receive the necessary assistance to succeed in their online

learning endeavours. The COVID-19 pandemic has disrupted traditional methods of knowledge production and dissemination in various ways. Conferences and workshops have been cancelled research projects have been put on hold making it more difficult for marginalized voices to be heard in these spaces. However, our findings also recognize several challenges that have arisen during the transition to online learning, including the digital divide—referring to inequalities in technology access and internet connectivity. Effective participation in remote learning necessitates assistance for students as they navigate essential technological resources required for their studies. Addressing this divide plays a pivotal role not only in ensuring all students enjoy equitable opportunities in online education but also fostering an inclusive learning environment. Harmonizing assessment practices with online pedagogy becomes an undeniable requirement for instructors during this digital shift. This study unequivocally highlights the significance of thoughtfully revising and fine-tuning assessment methods tailored to fit seamlessly into the unique contours of online education. Consequently, institutions need to venture into pioneering exploration which includes innovative methods of assessing student learning and achievement accurately within the online sphere. Furthermore, this study also identifies wise strategies that proficiently guide the transformative venture towards embracing online learning methodologies. These strategies embody united efforts focusing on providing students from disadvantaged backgrounds with unimpeded technological support and unhindered access to the internet. By surmounting these technological barriers institutions pave the way for establishing an inclusive online learning environment where all students can benefit from equal access to resources. Online learning breaks down barriers such as geographical limitations and financial constraints so that a wider range of students can access educational opportunities. This helps promote fairness in higher education. A significant advantage highlighted by research is the flexible nature of online learning. It allows students to learn at their own speed from anywhere around the globe. This means they can have personalized learning experiences tailored to their individual needs and circumstances. They have easy access to educational resources suited to their preferences and schedules which enhances their engagement level. Boosts motivation levels along with overall academic

achievements greatly improve as well. Besides this finding also brings up an important point about effective management strategies being crucial during transitions from traditional teaching methods. Institutions must invest in comprehensive training programs that equip educators with both pedagogical skills and digital literacy needed for offering effective online instruction. Moreover. Promoting effective teaching practices and ensuring that educators can engage students successfully in the online learning environment is essential. As the research findings indicate, addressing the challenges and capitalizing on opportunities presented by online learning requires a well-rounded approach. Therefore. We must also establish support systems for students that take into account their unique needs. This includes providing them with access to technology and the internet. Additionally. It involves fostering collaboration between institutions, government bodies, and other stakeholders to help bridge the digital divide. By promoting information sharing. Pooling resources we can develop comprehensive policies and initiatives that promote fairness, inclusivity along with increased access to higher education through online platforms.

Recommendations

The findings discussed in the scholarly articles emphasize the importance of addressing equity and epistemic justice concerns in the online learning environment. Based on these findings, we suggest the following recommendations to ensure fairness and knowledge justice in online higher education:

Student Engagement

Student engagement during online learning has emerged as a prominent challenge in the context of the COVID-19 pandemic. To address this challenge, the literature suggests several strategies for educators. Firstly, educators can set expectations and model engagement by reaching out to students prior to the start of the course, clearly identifying assignment

due dates, and creating a welcoming and supportive course environment (Staker & Horn, 2012). Secondly, designing well-structured courses that promote interaction, social presence, and align learning activities with goals can enhance student engagement (Garrison, Anderson & Archer, 2000). Thirdly, fostering instructor presence and intentional engagement through regular and substantive interactions, availability for questions, and providing timely feedback is crucial (Aragon, 2003). Effective use of technology is also emphasized, as addressing technical barriers and ensuring access to devices and reliable internet are pivotal for engaging all students (Means & Neisler, 2020). Additionally, educators can address the 5 C's (Connection, consistency, content, community, and compassion) by demonstrating investment in student success, establishing a caring atmosphere, and fostering a supportive community of learners (Bates, 2020). Lastly, incorporating social and emotional learning strategies, such as building relationships, creating a sense of belonging, and providing opportunities for student choice and voice, can further enhance student engagement (Durlak et al., 2011). By implementing these strategies, educators can promote student engagement and improve the overall quality of online teaching and learning experiences during the COVID-19 pandemic.

Development and Implementation of Inclusive Pedagogical Frameworks

To advance the cultivation and execution of inclusive pedagogical framework, it is imperative for academic institutions to foster an environment that is condusive to diversity, inclusivity and the embracement of diverse perspectives. Instructors can incorporate these frameworks by designing learning activities that engage students in discussions encompassing diverse perspectives and experiences. By valuing and incorporating diverse knowledge systems, institutions can foster a sense of epistemic justice and promote equitable access to knowledge. Online courses should be designed with inclusivity in mind. This means using a variety of communication methods, providing transcripts of audio

and video lectures, and offering accommodations for students with disabilities.

Prioritisation of Professional Development for Faculty and Staff

The prioritisation of perpetual professional development and opportunitiesfor faculty and staff assumes paramount significance in the enhancement of their digital literacy competencies, pedagogical acumen and adaptness in leveraging efficaciously. The training programs should focus on equipping instructors with the necessary skills to create inclusive online learning environments, promote student engagement, and address the needs of diverse learners. By empowering instructors, institutions can ensure the delivery of high-quality online education that promotes equity and epistemic justice.

Ensuring Equitable Access to Online Learning Resources

Higher education academic institutions should ardently endeavour to ensure the equaitable provision of e-learning resourcesto the entire spectum of students includin those hailing from low income backgrounds and those endowed with limited digital literacy competencies. We may need to provide digital devices, internet access, and various online resources in different formats. Additionally, institutions can offer support services, such as technical assistance and digital literacy training, to help students overcome barriers and navigate the online learning environment. Higher education institutions need to provide support to diverse student populations. This includes providing academic advising, tutoring, and mentoring to students from marginalized backgrounds.

Facilitating Collaboration and Nurturing Community Building

It is incumbent upon academic institutions to proactively promote community and collaboration within the online learning landscape. One way to encourage student interaction and peer-to-peer learning is to utilize online forums, chat rooms, and video conferencing platforms. These tools can help achieve this goal. Creating opportunities for students to collaborate, share their experiences, and learn from one another can enrich the learning experience and promote a sense of belonging and equity.

Aggregating Feedback and Conducting Rigoroud Evaluations

Academic instituitons would benefit from instituting mechanisms for the collection of input from students and instructors alike; appertaining to the efficacy of strategies and initiatives geared toward the advancement of equity and the cultivation of epistemic justice. Regular assessments and feedback mechanisms can provide valuable insights into the impact of interventions and inform future decisions and policies. Continuous evaluation and improvement based on feedback can help institutions refine their approaches and ensure ongoing progress towards equity and epistemic justice. Higher education institutions need to address the impact of the pandemic on knowledge production and dissemination. This includes creating spaces for marginalized voices to be heard and developing new ways to evaluate the quality of academic discourse.

Conclusion

The COVID-19 pandemic has presented significant challenges for higher education institutions, particularly in the transition to online teaching and learning. However, the findings from the articles in this book chapter provide valuable insights into the challenges associated with

online teaching and learning, along with sagacious strategies for effective management. By addressing technological barriers, providing comprehensive training for instructors, establishing robust support frameworks for students, and adapting assessment practices, higher education institutions can navigate the complexities of online learning and promote equitable access, high-quality instruction, and student success. The lessons learned from the pandemic can catalyze transformative change in higher education, promoting innovative approaches that prioritize equity and epistemic justice. By adopting a holistic and collaborative approach, higher education institutions can leverage the benefits of online learning to provide quality education to a broader range of students while ensuring that all students have equitable access to educational opportunities.

In conclusion, the above recommendations aim to guide institutions in promoting equity and epistemic justice in online higher education. Institutions can create an inclusive and supportive online learning environment by adopting inclusive pedagogical frameworks, prioritizing professional development, ensuring equitable access to resources, fostering collaboration, and collecting feedback. Continued research and collaborative efforts are essential to further enhance our understanding and implementation of effective strategies for promoting equity and epistemic justice in online learning in South Africa and globally.

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9

Protective Factors for Adjustment to Online Teaching During COVID-19 Pandemic: A Social Justice Perspective

Peter J. O. Aloka, Oluwakemi Ajayi, and Rosemary A. Olendo

Introduction

In March 2020, World Health Organization declared COVID-19 a global pandemic. This immediately necessitated the closure of many sectors of the world economies, education included. Subsequently, with institutions of learning included in the lock down, continuity had to be ensured through the adoption of new ways of teaching and learning. The only way to ensure social distancing was through asynchronous modes of teaching and learning. Therefore many countries shifted to online learning (e-learning) whose critical role in ensuring the achievement of the set educational objectives and accessibility to higher education cannot be overemphasized (Alsabswy et al., 2013).

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Docimini and Palumbo (2013) observed that e-learning enhances the quality of knowledge acquisition and transfer because of its dynamism and immediate learning environment that it offers learners. Almahasees et al. (2021) affirm its usefulness particularly during COVID-19, citing its convenience, self-learning, low costs and suppleness.

Despite the importance, most countries especially the developing ones have been struggling with the intention to implement e-learning in institutions of higher education even before the pandemic. These experienced delays in the implementation of e-learning according to Kibuku et al. (2020) are owed to varied challenges. In Jordan, Almahasees et al. (2021) explain that it requires adaptation, reduces faculty-student physical contact, motivation, and data privacy together with technical and internet concerns which they observe affect its efficacy compared to in-person teaching and learning. Further, initiatives and projects by organizations such as African Development Bank to support its implementation have lagged behind in realizing their objectives (Borstorff & Keith, 2007). With the emergence of COVID-19, irrespective of the level of technology coupled with the adoption of social distancing and isolation as containment measures, e-learning was embraced in most of the affected countries of the world to ensure continuity in the education sector (Cantelmi & Lambiase, 2020 as cited in Truzoli et al., 2021). Most authors therefore refer to online learning as a result of COVID-19 as "emergency remote teaching" (Truzoli et al., 2021, p. 948) since it may not have followed the proper planning and design of e-learning instructional programmes. The fear and uncertainty that accompanied the pandemic and subsequent behaviour of social distancing and isolation impacted on people's physical and psychological heath. Consequently, while health professionals and countries were struggling to contain the virus, individuals were wrestling with mental challenges such as depression, anxiety and distress reactions such as anger, insomnia and post-traumatic stress disorder (Truzoli et al., 2021).

The abrupt shift from the traditional in-person to online mode of teaching and learning was received differently by faculty in various world universities. This period was marked with psychological distress. For instance Moccia et al. (2020) reported 19.4% mild distress and 18.6%

with moderate to severe distress in the general Italian population. Therefore surviving such a period was highly dependent on the individual's characteristics and background. In Germany Daumiller et al. (2021) reported heightened stress due to the difficulty experienced by faculty as a result of the negative perception held by some of them. They noted that those faculty who viewed the shift as positive were able to cope and positively facilitate online learning activities. On the other hand, Truzoli et al. (2021) reported the existence of low level of satisfaction for online teaching attributed to unavailability of facilities, internet usage and network, planning and evaluation of learning among other barriers. This is consistent with the results of the experimental study carried out among Yemeni Universities' English as a Foreign Language (EFL) course which revealed feelings of inadequacy among the teacher trainees after going through Computer Assisted Language Learning (CALL) which they felt left them incompetent and ill prepared to deliver technology-related courses (Alotumi, 2020a, 2020b). In China Su and Guo (2021) revealed positive effect in system quality, course design, learner-learner interaction, learner-content interaction, and self-discipline, on learning outcomes and satisfaction with online curricula during the COVID-19 epidemic. Importantly the strongest effect on learning outcomes and satisfaction with online curricula during the COVID-19 epidemic was established as Learner-content interaction. Teng (2023) reiterated that students' satisfaction was significant for the realization of effective online education practices and promotion of the development of sustainable online courses. This is consistent with Budu et al. (2018) emphasis on the critical role played by the students' in the implementation of e-learning where acceptability was envisaged as paramount to behaviour intention.

In Africa, Ssekakubo et al. (2011) attributed reduced success among the users to high levels of ICT illiteracy, discomfort experienced with the use of technology coupled with usability issues. With the abrupt onset of COVID-19 most Higher Institutions of Learning (HEI) in Africa were ill prepared for e-learning. Bekele (2021) categorized the HEI into three depending on their preparedness for e-learning as mitigation for the COVID-19. The first category comprised the Transformationalists,

who generally had Learning Management Systems (LMS), used interactive or online pedagogy, their students and faculty had access to the computers, internet connectivity and supporting infrastructure. These constituted 29% of the African universities such as Ghana University, American University of Cairo and Al Akhawayn University of Ifrane just to mention a few. In the second category, the Late Experimenters are found those who had started developing some *sort* of technological solutions however had insufficient institutional readiness, expertise and capacity to shift to online teaching and learning. They thus used the available resources to temporarily manage the crisis in the hope that after the scourge they would revert to the traditional mode of teaching. Majority of such institutions were not very successful since they also experienced challenges with insufficient infrastructure, technological skills and pedagogy affecting both faculty and students. Some of the common practices in this category included the use of Moodle and Google meet for the LMS that for instance was employed by the Kenyan and Namibian Universities particularly with campuses in the cities. South Africa on the other hand had challenges with appropriateness of pedagogy. In Uganda for instance, Makerere University had to partner with Television Networks to help offer free platforms for lesson transmission. The last category, The Laggards were those who were completely unable to involve in online or remote teaching and learning since they could not afford and never had any signs of readiness. Students in such HEI were thus left behind (Bekele, 2021).

Comparatively, Europe was better prepared for online learning during the pandemic since before that 85% of the institutions had established educational materials' repository and support units for digital teaching and learning (Koninckx et al., 2021, May 19). Given the varied experience with the pandemic this chapter therefore explores protective factors for adjustment to online teaching during COVID-19 pandemic.

Social Justice in Education

According to Bell (1997), education for social justice is characterized as both a process and a goal" with the ultimate aim being full and equal participation of all groups in a society that is mutually shaped to meet their needs. Moreover, Hackman (2005) argues that social justice education encourages students to take an active role in their own education and supports teachers in creating empowering, democratic, and critical educational environments. In another view, Murrell (2006) argues that social justice is a disposition towards recognizing and eradicating all forms of oppression and differential treatment extant in the practices and policies of institutions, as well as a fealty to participatory democracy as the means of this action. In this vein, Rizvi (1998) identifies three broad philosophical traditions for thinking about social justice: liberal individualism, market individualism and social democratic. Bettez (2008), in a discussion of university teaching, outlines seven skills, and dispositions of activist social justice education. These include: "(1) promoting a mind/body connection, (2) conducting artful facilitation that promotes critical thinking, (3) engaging in explicit discussions of power, privilege, and oppression, (4) maintaining compassion for students, (5) believing that change towards social justice is possible, (6) exercising self-care, and (7) building critical communities" (p. 276). Hooks (1994) reiterate that itis crucial that critical thinkers who want to change outreaching practices talk to one another and collaborate in a discussion that crosses boundaries and creates a space for intervention" (p. 129). Therefore, by adopting a social justice perspective, it is expected that characterizing diverse strands can help the academic staff and students at universities to better build bridges across various positions and create openings for more sustained dialogue among educators who share similar, and often overlapping, goals.

Protective Factors for Adjustment to Online Teaching During COVID-19 Pandemic

The COVID-19 epidemic has spread fast and without discrimination throughout the world. Governmental measures to stop the virus's spread have resulted in widespread social isolation, which has serious effects on mental health (Chen & Bonanno, 2020). Although these limitations have shown to be unpleasant for people of all ages, teenagers may find them especially tough because, at this time of development, they greatly rely on their peer relationships for emotional support and social development (Gualano et al., 2020).

While it may take several years and studies to completely grasp the effects of the COVID-19 pandemic, previous research consistently links the pandemic to mental health. There are certain COVID-19-related elements (such as governmental regulations, media coverage) that are important to note since they may affect these relationships. Adult research conducted in the past regularly shows that COVID-19 has a negative effect on people's mental health. For instance, a study done in China during the early phases of the crisis with 1210 participants indicated that more over half (53.8%) of the participants judged the COVID-19 pandemic's detrimental effects on their psychological health as moderate to severe (Fathayatih et al., 2023). According to a second study conducted in China, COVID-19-related increases in generalized anxiety were more apparent in younger (35 years) individuals than in older age groups. Over a third (38.9%) of healthcare workers reported having trouble sleeping, and nearly a quarter (23.2%) and 22.8%, respectively, showed higher COVID-19-related symptoms of anxiety and depression (Gualano et al., 2020).

The Covid-19 pandemic has been identified by the World Health Organisation as a current hazard to humanity. As a result of the pandemic's successful global shutdown of a number of activities, including educational activities, colleges have migrated dramatically as a crisis response, with online learning acting as the educational platform. Teachers now have to deal with new stressors brought on the responses to the COVID-19 pandemic. Teachers during the pandemic are also dealing with the strains of the pandemic itself, from health concerns, changes due

to working from home, and managing relationships with students (such as the maintenance of a positive student–teacher relationship that is so challenging online). These strains are in addition to pre-pandemic stressors such as excessive administrative obligations, strained relationships with colleagues and school leaders, and emotional labour (Yang et al., 2021). Teachers have moved their classes online as the epidemic spread over the world in the first half of 2020, despite the challenges of teaching online. While some teachers have lamented the change, others have risen to the occasion and embraced it (Yang et al., 2021).

Protective factors are those that make negative things less likely to happen or lessen the effects of risk factors. Protective factors might be thought of being positive countering circumstances. Certain risk and protective factors remain constant over time. Strengths and resources known as protective factors enable individuals to achieve despite risk factors like poverty or incompetency (Bao, 2020).

The thematic review of literature presents the themes that were discussed in this chapter, which are as follows:

Social and emotional competence

Researchers and educators from all over the world are working hard to develop more advanced learning techniques based on the current situation. Geographically dispersed students can now receive an education from educational institutions thanks to the increasing growth of the Internet, use, and accessibility of platforms (Dube, 2020). We are not unfamiliar with online education, distance learning, or remote learning. The only difference is that now, because of social exclusion and the nationwide lockdown brought on by the COVID-19 pandemic, education is no longer available from any source (Dube, 2020). A disruptive social life and studying in isolation have made it hard for children and educators due to tight isolation protocols of the COVID-19 pandemic, which have forced them to stay at home. Both teachers and students are missing out on group classroom activities, which are the very foundation of group learning. Students and teachers have reported feeling stressed as a result of all this. We are all attempting to counteract the negative effects of low physical activity and spending all of our time at home by

engaging in a variety of other activities to manage this condition (Bao, 2020).

The study of emotional competence is becoming more popular in the fields of business, psychology, and education. The idea is based on the knowledge of one's own emotions, aiding in the self-direction of emotional responses, labelling the experiences of various emotions, and assisting others in understanding and assisting others in channelling their emotions (Hadar et al., 2020). Additionally, it describes how to deal with emotional upheavals, develop strategies and abilities to prevent emotional exhaustion such as stress, emotional self-control, burnout and learn to avoid the negativity of emotions and handle egoism (Porat et al., 2020). Students were given a variety of exercises during their elementary school years that helped them comprehend and become aware of their own emotions, as well as real-world applications that helped them channel their emotions in more positive ways. Students are observed engaging in value-driven activities, demonstrating self-awareness, empathetic behaviour, and acting in an assertive and altruistic manner at work. Many academic activities, such as group projects, team activities, role plays, and so on, aid in the development of all these skills in addition to their academic success.

To properly manage emotional discomfort at this difficult stage, students need to have increased emotional competence (Brammer & Clark, 2020). This will help them be more robust to the challenges of the COVID-19 epidemic and do better academically. Students also require emotional competency to equip them for the fast-paced world, in addition to online learning readiness (computer skills or self-control in an online learning environment). The capacity to express, control, and comprehend emotions is referred to as emotional competence (Brammer & Clark, 2020). The emotional maturity of teenagers during the COVID-19 epidemic requires special consideration for two main reasons. First, emotional competence is formed through socialization during adolescence, which has been shown to have a significant impact on academic success and effective functioning in adulthood (Chen & Bonanno, 2020). Adolescents have been demonstrated to be less aware and less accepting of their own emotions as a result of the inescapable social isolation brought on by COVID-19 as well as to have a harder time

controlling their emotions (Bao, 2020). Indeed, a number of early studies on COVID-19's immediate effects noted a rise in mental health concerns in teenagers and young adults associated to low emotional competence (Adedoyin & Soykan, 2020).

In both adolescent and young adult groups, having high emotional competence may help to improve academic achievement in addition to reducing mental health problems (Geary, Allen, Gamble & Pahlevansharif, 2023). Low emotional competence is associated with an increase in mental health issues, which interfere with academic performance (Gualano et al., 2020). Adolescents had a harder time controlling their emotions as a result of changes in their social relationships also, they experienced higher levels of emotional discomfort as a result of COVID-19-related problems (Clinton, 2020). COVID-19 intensified this linkage. Recent studies have found that students who are better at perceiving and controlling their emotions are more prepared for online learning and are less susceptible to online distractions (Crawford, 2020). As a result, they are more likely to perform better academically in an online learning environment (Geary et al., 2023).

The awareness of higher education as a very stressful time appears widely in the discourse of teacher education, as do social and emotional abilities (Ye et al., 2021). This has given rise to the concept that universities should help students build their social and emotional skills to improve their capacity to handle stress (Wang et al., 2020). As a way to lessen teacher stress and improve their coping mechanisms, some research has shown the value of interventions centred on social and emotional learning and mindfulness (Dede & Richards, 2020). Given the expectation that teachers will serve as role models for future generations of citizens, such research has prompted academic authorities in education faculties to implement action plans to ensure that social and emotional competencies have also been stressed in the domain of teacher education (Small, 2020; Sokal et al., 2020). Recent reviews revealed that social and emotional skills for teachers did not appear to be given significant priority throughout teacher preparation. This agrees with Bell (1997) that the education for social justice is characterized as both a process and a goal" with the ultimate aim being full and equal participation of all groups in a society that is mutually shaped to meet their needs.

Concrete support in terms of need

The epidemic has altered how individuals acquire and deliver education, claims the World Economic Forum (Rapanta et al., 2020). Traditional classroom interactions between students and teachers have been supplanted by digital learning platforms, such as online learning and virtual education systems, which lack face-to-face interaction (Hodges & Fowler, 2020). Thus, online education has become a practical choice for education from preschool to university level, and governments have supported online teaching and training through the use of tools like radio, television, and social media (Lee et al., 2021). Government and business organizations as well as other parties have worked together to give teachers the tools and training, they need to instruct students effectively on digital platforms. In addition to being widely used to generate learning materials and deliver online classes, new digital learning platforms like Zoom, Google Classroom, Canvas, and Blackboard also enable teachers to design training and skill development programmes (Hofer et al., 2021). At first, many educators and learners were wary of online learning. However, institutions' prolonged shutdown drove educational institutions to develop new ways to deliver instruction and compelled teachers to pick up new digital abilities. This has been tough for different people in varying degrees; for some, it has resulted in tears, and for some, it is a cup of tea (Hofer et al., 2021).

Enabling students' cognitive activation has created a substantial issue in the use of distance modes of teaching and learning, and teachers have reported finding it challenging to use online teaching as a daily way of communication. Concerns regarding conducting exams with little student contact have also been voiced by teachers (Garbe et al., 2020). An unsatisfactory level of teacher-student interaction has been caused by the lack of smart devices and unstable internet connectivity. Some lecturers have depended on pre-recorded films out of a need to choose the right tools and medium to reach their students, which further discourages interaction. Teachers in tier 2 and tier 3 cities (semi-urban areas) have had to pay more to ensure access to high-speed internet, digital gadgets, and dependable power sources in locations where the majority of teaching is done online (Selvaraj et al., 2021). Particularly

in developing countries, teachers lack enough training and access to reliable energy and internet services, which contributes to their extreme digital illiteracy. Access to smart devices, the internet, and technology is restricted and patchy in rural or isolated places (Selvaraj et al., 2021). Even teachers who are familiar with the necessary technology are not always equipped with the pedagogical skills to satisfy the needs of online education in some urban areas. The lack of training, combined with regional issues (such as stakeholders' socioeconomic standing and infrastructure), makes it challenging to successfully deliver digital education (Paulson & McCormick, 2020). The disparity in digital education between schools in country such as India is startling. For instance, just 32.5% of schoolchildren have access to online courses. In both private and public schools, only 11% of students have access to online courses, and more than half can only access videos or other recorded content. In the event of pandemic-related restrictions, only 8.1% of students in government schools have access to online classes (Paulson & McCormick, 2020).

However, systematic instructional design processes and team-based assistance for course development and preparation were not accessible during the quick uptake of online teaching in response to COVID-19. Instead, individual academics were required to teach online on their own with little help and direction from their university, which made the task even more challenging since they were working remotely from home. Some academics have conceptually distinguished between the two and called the latter "remote teaching" due to the significant differences between the standard pedagogical approach to online instruction and that required by COVID-19 (Lowenthal et al., 2020). Distance learning is only capable of imparting knowledge through lectures, with no emphasis on learner-centred activities or peer-to-peer interactions. However, as online teaching progressed during the pandemic era, most institutions of higher learning were able to provide concrete support for online teaching's effectiveness. Similarly, this assertion agrees with Hackman (2005) that social justice education encourages students to take an active role in their own education and supports teachers in creating empowering, democratic, and critical educational environments.

Resilience

The impact of pandemic on education has resulted in a change to online instruction, with a focus on teachers' attitudes about the significance of technology as a consideration while their feelings are assessed. However, research on how to quickly make these unanticipated transitions as well as the potential effects of the decisions made by institutions and instructors regarding the use of different educational strategies or technologies supports, suggests that (or at least intended before COVID-19) foraying into uncharted waters (Crompton et al., 2023). The epidemic has altered educational practises in ways that were never fully acknowledged in our lifetime. In a time of uncertainty for the success implementation of online teaching, teachers were required to drastically modify their methods. Teachers maintained consistent behavioural attitudes in which they continued to support online teaching to the best of their abilities despite further more unfavourable thoughts and sentiments surrounding the lack of face-to-face instruction (Corbera et al., 2020).

Understanding resilience demonstrates how crucial it has proven to be for the educational environment, particularly online teaching environment. Retaining qualified, professional teachers while being aware of how difficult the processes and circumstances that contribute to teacher resilience are (Cifuentes-Faura et al., 2021). Small (2020) contends that a "two-pronged" strategy is required. The first step is to equip teachers with the skills they need to deal with the pressures of choosing a demanding profession, as well as to train them in conservation. Second, in an effort to lessen the existing workload strain and stress, it is better to address common variables that boost employment and extend to teacher weakness by engaging in expert consulting through each of its channels.

Teachers' resilience has been characterized as a quality that enables them to remain interested in their work or as a process of gradual growth that includes the capacity to adjust to various situations and to strengthen a person's ability to deal with adverse conditions (Almazova et al., 2020). They suggest that resilience is related to emotional regulation and effective social interaction, and involves a mode of interaction with environmental events that are triggered and nurtured during times of stress. The main strategies used by individuals when they encounter

damaging situations or the ability to the individual weaknesses and stressors of the environment (Hardar, 2020). Resilience is demonstrated by how people react to difficult situations, and research has shown that this trait is a personal strength. People's reactions to difficult situations also demonstrate the convincing threats to their occurrence and the variety of difficulties that resilient teachers can successfully overcome. The environment protects factors to support the measure of the teacher's resilience measures the same vital side to connect its growth, and only as resistance analysis acknowledges the role that competes with the factors safeguarding the individual.

According to (Hedding et al., 2020), there is a resilience brought on by a number of challenges. These challenges come in the form of failed classes, student disinterest, inadequate teacher instruction, and a complete lack of contact between the teacher and the students as well as among the students themselves. As a result, teachers must be able to put together effective instructional materials that students can understand (Govindarajan & Srivastava, 2020). Teachers must be knowledgeable and competent, as well as persistently work to overcome challenges, and they must be well-prepared for both their lessons and the creation of instructional materials. For both students and teachers, online teaching and learning during the COVID-19 epidemic is a challenging experience that cannot be avoided. Negative aspects of online learning can be reduced so that personal resilience can be created. This resilience is highly helpful as a safety net for coping with challenging circumstances that cannot be avoided. Resilience is the capacity to confront and get through any challenges that arise during online teaching and learning. When faced with challenges in teaching and learning, students that are resilient will not give up quickly (Govindarajan & Srivastava, 2020). Being resilient is a valuable quality. This is produced by determination, which is the result of effort and enthusiasm (Maphalala & Adigun, 2021). And there is a tonne of proof of this kind of resiliency among organizations as well as among individuals enrolled in open universities around the world who are studying part-time and via remote learning. In agreement, Murrell (2006) argues that social justice is a disposition

towards recognizing and eradicating all forms of oppression and differential treatment extant in the practices and policies of institutions, as well as a fealty to participatory democracy as the means of this action.

Online teaching self-efficacy

According to Yang et al. (2021), educators who feel more connected to their peers may have higher levels of self-efficacy due to their emotional wellness, as well as more opportunities for participation in social persuasion and vicarious experiences. Prior to the COVID-19 pandemic, research revealed a beneficial relationship between teachers' perception of school connectivity and their ability to teach (Yang et al., 2021). According to research, school connectivity has a positive effect on teachers' self-efficacy in both face-to-face and online learning settings. Researchers have used self-efficacy assessments in the past in a variety of academic and technological courses and found that they had a favourable impact on students' achievement and perseverance in particular activities (Maphalala & Adigun, 2021). According to a report by Yang et al. (2021), online teaching and learning have practical implications as an addition to improving learning and having the ability to reach a wide range of students.

Online education goes beyond simply having a space or a computer to teach. More crucially, it calls for specialized abilities as well as self-efficacy in online teaching. The significance of motivation in the online teaching and learning environment has been acknowledged in numerous research (Zimmerman, 2020). The fact that numerous notions have been utilized, some of which have similarities to self-directed teaching and learning and motivation, presents a problem for the study of online teaching preparedness specifically during COVID-19 pandemic (Bao, 2020; Zimmerman, 2020). The current study concentrated on online teaching readiness literature: computer and online self-efficacy in an effort to identify online learning ready from self-directed learning and motivation.

According to studies, a student's online academic achievement is related to their preparation for online teaching and learning. Teachers' comfort with using computers and the Internet is referred to as their internet self-efficacy (Zimmerman, 2020). Online problem-solving is

made possible, technology-related stress is reduced, and online teaching competence is improved by having confidence utilizing Microsoft Office software or conducting Internet research (Fathayatih et al., 2023). Students' tenacity to online self-efficacy is demonstrated by their capacity to focus on online courses and tasks while avoiding distractions from social media (such as Facebook or Instagram) and video games (Ye et al., 2021). The readiness and confidence in online interactions with peers and students to expand comprehension, which helps their learning outcomes and learning satisfaction, are all indicators of online self-efficacy (Vansteenkiste et al, 2020). Students are helped in the transition to the online learning environment by having self-efficacy with computers and the Internet, self-control in online settings, and online communication (Wu & Gao, 2020). These three elements collectively influence how well students achieve in online learning. In agreement, Hooks (1994) reiterate that it is crucial that critical thinkers who want to change outreaching practices talk to one another and collaborate in a discussion that crosses boundaries and creates a space for intervention.

Social Connectedness

Social connection is the perception of having trustworthy relationships and being cared for by people among the community. In addition to being associated with keeping online students enrolled in their courses, social connection and learning communities have also been shown to differ significantly across face-to-face and online learners (Porat et al., 2020). To shed light on the elements that enhance student experience and keep students enrolled in online courses of study, more research in this area is required. Since online courses require more autonomous learning and less one-on-one interaction with instructors than face-to-face courses do, maintaining social connections might be difficult (Paulson & McCormick, 2020). Students might be more inclined to adopt a somewhat anonymous persona and engage in more cursory social interactions (Neuwirth et al., 2021). Because of their anonymity, students may have less meaningful interactions with teachers and their peers, which may affect their sense of belonging (Neuwirth et al., 2021).

Online students frequently rely on their lecturers to provide forums for social interaction and places where they can feel connected and supported (Neuwirth et al., 2021).

Building learning groups might be difficult when learning online. Lyons et al. (2020) discovered learning community variables, such as clear communication, high-quality instructional feedback, and high support to encourage teaching and learning, that had an impact on retention rates for online learning compared to face-to-face learning. A well-structured course with instructor comments and clear expectations is more important for student happiness but it is not as important as their social presence in the online classroom. These results corroborated those of Motala and Menon (2020), who stated that timely feedback, unambiguous expectations, and individualized contact from the teacher all contributed to student happiness. All kinds of things go into creating a learning community. The satisfaction of psychological demands and online course satisfaction have only been briefly studied (Hodges et al., 2020). According to Chen et al. (2020), among online students, affiliation, which was assessed using a feeling of community measure, was the best predictor of course satisfaction. Additionally, strong determinants of course satisfaction were autonomy and aptitude. It should be mentioned that the study did not use particular need satisfaction measures to determine how autonomous and capable participants were. Likewise, Li and Lalani (2020) argue that research, satisfaction with autonomy, competence, and relatedness independently predicted favourable course ratings in both face-to-face and online learning environments. Competence was the best predictor of learning outcomes for both online and in-person settings.

Online instruction has received lower ratings for social connectedness and learning community, need satisfaction, and online course satisfaction compared to face-to-face teaching and learning (Fauzi & Khusuma, 2020). There has not yet been much research done on how online learning affects students' outcomes in terms of their sense of social connectedness and satisfaction of their own needs (Fauzi & Khusuma, 2020). In face-to-face settings, there has been substantial research on the importance of community and social relationships, but not in online teaching and learning environments. During the COVID-19 lockdown,

social connectedness significantly attenuated fluctuations in anxiety, life satisfaction, and depression symptoms. In comparison to individuals who felt socially isolated during the lockdown, those who perceived high levels of social connection during COVID-19 reported significantly fewer depressive symptoms, less anxiety, and much higher levels of life satisfaction (Crawford, 2020).

Changes in educational platforms brought about by COVID-19 made learning more difficult, particularly for adolescents. Peer impacts grow during adolescence (Clinton, 2020). These students have a heightened craving for social engagement and are more sensitive to social isolation as a result of the significant changes in the "social brain" of teenagers (Clinton, 2020). Adolescents' learning experiences must include social interactions with teachers, peers, and others (Bao, 2020). Without the motivation of face-to-face interactions with instructors and peers, students find it difficult to be cognitively engaged in class (Almazova et al., 2020). Additionally, the new platform presents knowledge in a whole different manner in a completely different setting (school as opposed to home), necessitating that kids use technology and interact successfully online while avoiding distractions in the new setting (Bayrakdar & Guveli, 2020). In summary, without any social contacts during the pandemic, teaching and learning effectively online was incredibly difficult. In agreement, Bettez (2008) argues that the dispositions of activist social justice education include promoting a mind/body connection, conducting artful facilitation that promotes critical thinking, and finally, building critical communities.

Conclusion & Recommendation

This chapter concludes that in spite of the numerous challenges faced in adjustment to online teaching during the COVID-19 pandemic, there are several protective factors which enhanced shift to online mode of learning among academic staff and students in universities. The chapter argues that one of the major protective factors for adjustment includes social and emotional skills for teachers which eased shift to the online learning mode. Secondly, there was concrete support in terms of

need which included new digital learning platforms like Zoom, Google Classroom, Canvas, and Blackboard also enable teachers to design training and skill development programmes. Thirdly, the academic staff at universities demonstrated resilience, which demonstrates how crucial it has proven to be for the educational environment, particularly online teaching environment. This resilience is highly helpful as a safety net for coping with challenging circumstances that cannot be avoided. Moreover, literature indicates that online teaching self-efficacy is another major protective factor which enhanced adjustment to online teaching and learning at universities. Thus, students' tenacity to online self-efficacy is demonstrated by their capacity to focus on online courses and tasks while avoiding distractions from social media and video games. Finally, literature indicates that there is social connectedness among staff and students at universities and this significantly attenuated fluctuation in anxiety, life satisfaction, and depression symptoms.

Thus, from the social justice education perspective, this would encourage students to take an active role in their own education and supports teachers in creating empowering, democratic, and critical educational environments. Moreover, to adequately adjust to the online teaching at universities, adopting the social justice perspective assists in promoting a mind/body connection, conducting artful facilitation that promotes critical thinking, engaging in explicit discussions of power, privilege, and oppression, maintaining compassion for students, believing that change towards social justice is possible, and building critical communities. On the basis of the findings from literature review, the chapter recommends that Universities should provide social support mechanisms to enhance social justice for staff and students in readiness for pandemics. Moreover, Universities should train staff and students on intrinsic support mechanisms to enhance their resilience to stressful experiences due to pandemics.

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Teaching and Learning in Higher Education in the Post-COVID-19 Era: A Prospective View

Felix Maringe and Otilia Chiramba

Introduction

In the context of South African higher education institutions, epistemic justice is particularly relevant due to the country's history of apartheid and its ongoing effects on knowledge production. During the apartheid era, certain knowledge systems were privileged while others, particularly those of indigenous African communities, were marginalised and devalued (Heleta, 2016). As South Africa transitioned to a post-apartheid society, efforts have been made to address epistemic injustices and promote more inclusive approaches to knowledge (Zembylas,

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2018). Hybrid learning, on the other hand, leverages digital technologies to enhance and extend traditional classroom-based education. Hybrid learning has become increasingly popular in higher education institutions worldwide, including South Africa, especially with the advancements in technology and the COVID-19 pandemic, which necessitated flexible learning approaches. The convergence of epistemic justice imperatives and hybrid learning in South African higher education institutions has the potential to both transform knowledge systems and promote inclusivity.

Hybrid learning has the potential to bring together diverse perspectives and knowledge systems, fostering a more inclusive curriculum. By integrating local, indigenous, and marginalised knowledges alongside dominant ones, hybrid learning offers a platform for recognition and appreciation of different ways of knowing (Chiramba & Motala, 2023). In the context of South Africa, where historical inequalities in access to higher education persist, hybrid learning can play a crucial role (Motala & Menon, 2020). Through online learning opportunities, it can break down physical barriers and reach students in remote or disadvantaged areas, promoting greater equity in educational access and opportunities.

The aim of this chapter is to provide a summary of the key findings from the preceding chapters, synthesise the major themes emerging from them, and attempt to provide what more can be done when attempting to promote equity and epistemic justice within online teaching and learning in South Africa. Our analysis of the content covered in this book indicates the presence of seven focal themes. These themes encompass the challenge of epistemic justice exposed by the COVID-19 pandemic in teaching and learning. In the context of this book, authors have delved into the manifestations of various forms of epistemic injustices within the context of the sudden shift from face-to-face to online teaching modalities in the COVID-19 and post-COVID-19 eras. Specifically, authors explored the prevalence of these forms of epistemic injustice in the domain of online and hybrid teaching and learning in South Africa.

Different Conceptions of Social Justice

Different perspectives on the conceptualisation of social justice encompass a range of ideas and approaches. The understanding of social justice, which concerns fairness and equity in the production, distribution, and validation of knowledge, is subject to diverse interpretations and theories (Kirkham & Browne, 2006). The multifaceted nature of social justice is evident in the varying conceptualisations put forth by scholars in general and specifically researchers for this book. These diverse perspectives offer unique insights and emphasise different aspects of the concept. Some scholars have viewed social justice through a lens of social and political power dynamics, highlighting the ways in which marginalised groups are systematically excluded from knowledge production and dissemination.

Others have approached social justice from a standpoint of recognition, emphasising the importance of valuing and acknowledging diverse forms of knowledge and expertise (Hutton & Cappellini, 2022). This perspective seeks to challenge dominant epistemological frameworks and promote inclusivity by recognising the validity of different ways of knowing. Another conceptualisation of social justice focuses on the role of epistemic justice, virtues, and vices in shaping knowledge systems (Baird & Calvard, 2019). It explores how intellectual virtues such as humility, open-mindedness, and fairness contribute to the creation of just knowledge practices, while vices like arrogance, bias, and epistemic exclusion hinder equitable access to knowledge (Ndlovu-Gatsheni, 2018). Furthermore, some scholars examine social justice through the lens of epistemic responsibility, emphasising the ethical obligations of knowledge producers and disseminators (Ndlovu-Gatsheni, 2018). This perspective underscores the importance of fostering trust, accountability, and transparency in knowledge production, and the recognition of the potential harm caused by epistemic injustices.

Fricker (2007) sees epistemic injustice as the harm inflicted upon individuals in their capacity as knowers or as subjects of knowledge. These injustices can be intentional, such as in cases of epistemic violence driven by ambitions to establish dominance over colonised people, or they can be unintentional, as seen when a system unknowingly promotes epistemic coloniality. Unfortunately, unintended epistemic coloniality

remains prevalent in higher education systems during the post-colonial era, where the values and structures of colonialism persist. Fricker (2007) identified two forms of epistemic injustice: testimonial injustice and hermeneutical injustice.

Testimonial injustice refers to the unjust exclusion or marginalisation of individuals' ideas and perspectives based on their identities. For instance, ideas influenced by masculinity have historically been favoured and prioritised over feminine viewpoints. Similarly, people's views are often evaluated through the lens of their sexualities. In the context of higher education, decision-makers in universities tend to conceptualise solutions that align with the value systems of the middle class, to which many of them belong. As a result, the views of lower class and working-class students are typically disregarded in the formulation of solutions.

Additional scholars including those of this book have extended the existing categories of epistemic injustice to encompass various dimensions. These include epistemic oppression, as highlighted by Medina and Walker in 2018, and epistemic exploitation, as discussed by Berenstain in 2016. Other scholars, such as Doston in 2012, have introduced the concepts of testimonial quieting or smothering and contributory injustice. Coady in 2010 has contributed to the notion of distributive epistemic injustice, while Grasswick in 2017 has explored the concept of epistemic trust injustice. Grasswick (2017) argues that scientific practices are prone to epistemic injustices given the history of science's evolution within a social context of racial and gender oppression.

On the other hand, hermeneutical injustice pertains to how individuals in positions of power interpret the circumstances of others, using frameworks that provide dominant models for understanding their lives. This injustice also encompasses how individuals themselves interpret their own lives. Often, those in power impose categories upon marginalised groups, labelling them as inferior, impoverished, ignorant, and backward. When individuals come to identify with these categories, they tend to feel less agency in their lives and become more dependent on the solutions and assistance provided by those in power. The varied conceptualisations of social justice provide a rich tapestry of ideas and frameworks for understanding and addressing the complexities

of knowledge production and distribution. By exploring these diverse perspectives, researchers and practitioners can engage in meaningful dialogue and work towards creating more equitable and just systems.

Emerging Themes

Cognitive Justice in Hybrid and Online Teaching and Learning

Cognitive justice is crucial in promoting equal recognition and validation of diverse knowledge systems and ways of knowing in education (Singh, 2009). Pettersen (2011) argues that there is an inherent cognitive injustice in technology use in higher education institutions. Several challenges arise in the South African education systems during and after COVID-19 regarding cognitive justice. The expectation was for digital technologies and learning platforms to act as drivers for the transition, without taking into account instructional design principles and the established knowledge of how remote teaching and online learning methods connect. Dlamini and Siyabonga assert that the significance of digital competences should not be overlooked, despite the considerable focus on online platforms during this transitional period. Lecturers face a significant hurdle in designing pedagogically sound learning activities that utilise digital technologies and learning platforms. Such challenges include limited access to the internet and unpredictable living conditions, coupled with the capabilities of technology.

Digital Divide and Support for Marginalised Students

The digital divide represents a manifestation of cognitive injustice. The COVID-19 pandemic has exacerbated existing inequalities and highlighted the significant digital divide in various parts of the world, including South Africa. Tshikota argues that most higher education institutions, in particular those in rural areas were adversely affected due to a lack of connecting devices, high data costs, and internet

connections. He further argues that bridging the digital divide amongst students and universities requires comprehensive and sustained efforts, including investment in infrastructure, policy interventions, digital literacy programmes, and collaboration between various stakeholders.

Masinire and Moyo centre their attention on students belonging to marginalised groups and the difficulties they encounter when acquiring knowledge through online teaching methods. Similarly, Maposa and Chakanyuka argue that the transition from in-person teaching and learning to the sudden emergence of remote teaching and learning presented difficulties in ensuring fairness and equal access to education, as well as addressing issues related to knowledge distribution and justice in higher education institutions. Many students from marginalised backgrounds may not have access to reliable internet connections or devices such as computers or tablets, which are essential for online learning (James, 2021). This lack of access can significantly hinder their ability to participate in virtual classes, access online resources, and engage in remote learning activities (Fricker, 2007; Simamora, 2020). Addressing these challenges requires targeted efforts and interventions to ensure that students from marginalised backgrounds have equal access to education during the pandemic. It involves providing equitable access to technology, supporting families with financial resources, offering language and cultural support, creating inclusive learning environments, and strengthening support systems to meet students' diverse needs (Simamora, 2020).

Staff Barriers to Online Teaching and Learning

Staff in universities are the key drivers of teaching and learning. As the pandemic disrupted their traditional tried and tested face-to-face modality, staff found themselves faced with a radically different approach to educating young people, in the form of online teaching and learning. Amongst the many studies which explored how teachers managed this sudden transition is a systematic review conducted by Kellen and Kumar (2021) in the USA of research on the subject undertaken between 2010 and 2020. They identified two broad categories of initial and ongoing

barriers. Amongst the initial barriers were challenges of getting started, and barriers of knowing the learners, especially the challenges they faced in their home environments. Issues around getting started included a lack of confidence, apprehensions regarding the authenticity of remote assessments, infrastructural frailties within institutions and limited technical support. Secondly, they found themselves having to know more about their students, especially in terms of how supportive of study were their home environments, whether students had sufficient internet access and enough bandwidth to support lecture materials that were now being delivered online, amongst others.

On the other hand, ongoing barriers included issues with time and workload management, with many teachers indicating that they now had to work substantially longer hours in the online modalities. They also faced substantial challenges to achieving student success than they would in face-to-face and the lack of adequate peer mentoring as they navigated the transition.

The research sampled in this book, especially by Aloka, Ajayi, Zindoga, and Mnyamana identifies these and other barriers in the area of psychological barriers to online teaching and learning. As online teaching increases in scale and as staff get more experienced, it seems prudent to encourage ongoing research on initial and ongoing barriers to reflect changing contexts.

Managing Crises in Unequal Societies

Measured on the Gini Index (World Bank, 2020), a statistical tool which maps out the dispersion of income and consumption across societies, South Africa is amongst the most unequal societies in the world with opulent affluence sitting side by side with abject poverty. More than 60% of South Africans live in conditions of poverty while 20% live in conditions equal to or exceeding those of the world's richest countries (World Bank, 2020). Almost all the 60% who live in conditions of poverty are Blacks, in rural, farming, and township environments (World Bank, 2020). When critical decisions are made in times of crises, unfortunately, it is what works for the affluent societies that influence the turn

of events. Students who live in circumstances of multiple deprivation such as in rural, township, and farming communities tend to be the most easily affected by adverse conditions affecting the sector. They are the hardest hit when tuition is withdrawn; they are the least adaptable when conditions change in the institutions and sector; they are the most vulnerable when it comes to dropping out when a crisis hits the sector, and they experience the fastest knowledge erosion when teaching ceases.

In this book, the chapter by Dlamini illustrates through issues of the digital divides, internet access, and access to ICT hardware amongst others how the disadvantaged in societies experience double jeopardy when tragedy hits societies.

Gender and Educational Crises

The battle for gender equality in education, as in other areas of human endeavours, has been gaining momentum over the years. Driven largely by the equality argument, gender issues have become located in human rights rationales while a growing body of literature also seems to suggest that females do things differently from men. For example, in the area of educational leadership, it has been established that female leaders tend to deploy collaborative strategies for school improvement while male leaders turn to command and authority resources to get the results they want; female leaders draw more on compassion while men rely on rules and policies; women influence, men coach; women prioritise tasks, men prioritise experience; women tend to trust people, men trust data (Heller & Ziegler, 1996). They bring something different to the tasks of development.

However, the battle for gender equality is far from over even at the best of times. For example, women continue to earn less over the course of time than their male counterparts. Some studies show that female graduates earn between 15 and 25% less than their male counterparts (Akpinar-Sposito, 2013). Although there is greater parity in terms of representation in higher education, many universities report more females than males in the academic ranks (Akpinar-Sposito, 2013). However, the representation of females in senior management ranks and

in research outputs and publications remains skewed in favour of the male counterparts. In addition, the more male student continues to enroll in degree programmes which pay more, such as in STEM subjects, than females.

These disparities tend to widen when higher education sectors and institutions are embroiled in turmoil. Girls experience higher rates of dropping out, of failure to resume their educational pathways, of absenteeism from scheduled classes, of failure to turn in assessments, which could be exacerbated by other factors such as poverty, living conditions, sexual abuse, and a general proneness to being the victims of gender-related violence amongst others (UNESCO, 2022).

In this book, Madhlangombe and Moyo explore a wide variety of gender-related issues in HE and conclude that while there has been notable progress over the years in terms of gender in higher education, the pandemic cruelly exposed the skin-deep nature and impact of these gender initiatives in higher education.

It appears clear to us that attending to issues of gender in higher education will remain a crucial pillar for reconstituting a more resilient higher education of the future.

Social Justice and Educational Crises

Societies are forever in a state of crisis. For example, there is never enough money to solve the problems of society. In addition, there is never a perfect solution in life. All solutions to problems create their own new problems. For example, in the last 15 years, much effort has been directed at the girl child in order to equalise chances and opportunities. There is now some evidence which shows that the interventions have created a new gender inequality where the boys have now been overtaken and are not at risk of slowed growth and development compared to their girl counterparts. Education and specifically higher education is a type of crisis both by and in itself. A crisis is created when a new condition can no longer sustain the ordinary way of doing things and often calls for radically new responses to normalise the situation.

Social justice assumes that there are some social measures by which people's value, sense of determination, and fairness can be measured. Given that there are multiple forms of social justice, including distributive justice, involving a determination of who gets what; procedural justice, which focuses on how fairly people are treated; retributive justice, based on the administration of sanctions and punishments for wrongdoing; and restorative justice which tries to restore relationships that may have been broken due to previous injustices, there is a sense in which HE needs to look carefully at ways in which the mistakes, omissions, and commissions of the past must be corrected.

In higher education, four broad principles which define social justice have been recognised. These include access, both physical and epistemic; equity in terms of fairness of new interventions, including perceived fairness; participation, is about the engagement of various groups in higher education, including girls, the visually impaired and other disadvantaged segments of the higher education community; and human rights, those non-negotiable expectations, such as the right to basic education which has now become a worldwide phenomenon (Mehus, 2023).

The chapter by Oloka, Ajayi, and Olendo grapples with the issues of social justice in higher education and concludes that staff and students require ongoing training and education around ideas of social justice and specifically point to the need to strengthen this element in future systems which purport to be more crises proof oriented. Chiramba and Maringe additionally investigated the matter of fairness and epistemic justice, highlighting the potential of hybrid teaching and learning methods in universities to create a stronger foundation for equity and epistemic justice within the realm of education.

Moving Beyond the Notions of Hybrid and Blended to Multimodal Teaching and Learning

The COVID-19 pandemic has ignited transformative discourses in higher education and reawakened the world to the persistent and even widening inequities based on race, class, socio-economic background, and family characteristics amongst students. In this book, two clear messages have been proffered; first, that universities should move away from the pedagogic monoletheism of face-to-face instruction based on the overstated argument of social constructivism; second, that universities have a responsibility to build resilient knowledge-making infrastructures which will withstand future crises such as were occasioned by the COVID-19 pandemic. Central to the second argument is the notion of resilience (Chiramba, 2021), which has become a key discourse in the post-pandemic era in higher education and in other areas of human endeavour.

The discourses, which are both remedial and future proofing, have been developed around four overlapping conceptual ideas about higher education as a middle-class project, online, blended, and hybrid teaching and learning. The last three concepts have tended to be deployed interchangeably creating a false understanding in the academy that they essentially mean the same thing.

In part, this section aims to correct this false understanding and further argues that a more resilient and crises proof higher education is likely to be served better by the idea of multimodality as both an organising principle for post-pandemic curriculum construction and as a underlying philosophy for its pedagogical basis.

A Critical Reexamination of the COVID-19 Pandemic Discourses

Four critical discourses have emerged out of the COVID-19 crisis in higher education.

1. Higher education as a project of middle-class dominance; the idea of the middle class is central to the discourses of modernity, capitalism, and wealth distribution (Banerjee & Duflo, 2008). Assuming that society is comprised on three broad classes including a small but filthy rich ruling class or elite, a poor working class, whose value to society is largely perceived in terms of their labour and in between these, a middle class comprising of technocrats, bureaucrats, and professionals who earn enough to remain with between 30 and 50% disposable income (Marx & Engels, 1998). In developed countries, the middle class has become the dominant class. On the other hand, in the less developed world, the working class, also referred to as the proletariat, is still in the majority.

   The middle class holds sufficient clout outside the political sphere to make life-changing decisions in societies across the world and in some cases, have effectively wrestled political power from the ruling classes for example in France to become the petite-bourgeoisie (Marx & Engels, 1998). They comprise the key players in policy formulation and implementation, resource allocation, and redistribution. What works for the middle class tends to be the blueprint for much decision-making across many societies, systems, and sectors. Anything else tends to be considered as secondary importance and usually only gets attended to as an add-on rather than as a primary driver of development. Bowles and Gintis (1977) assert that class is identified as a central category of analysis and is seen as the instrument of control and decision-making across all education sectors including what qualifies as worthwhile knowledge, how young people should be taught and assessed and how opportunities beyond schooling should be created to serve the needs, first and foremost, of the children of the middle classes. Giroux's contribution to this analysis has been phenomenal over the years. Giroux (1981) argues that only through radical critical pedagogy can we ever hope to transform the purposes and intentions of capitalist education which seeks the cementing of privilege and status of children of the ruling and middle classes and the continued servitude of poor working-class children who do not have to educated well as their value to society lies largely in the physical and manual labour they can provide.

As the COVID-19 pandemic unfolded, resulting in the closure of higher education institutions in most of world, for a wide range of reasons, the continuity of the university project was seen as critical despite the ravaging virus. Such reasons included that it would cost governments and institutions substantially more to re-establish students' knowledge gains once that is lost through closure; that large cohorts of affected students would drop out of education altogether, that this would have a substantial negative economic impact on national and global economies and that it would pose significant management of student cohorts in order to accommodate students who had to return to universities following the pandemic induced closures (Dayagbil et al., 2021). Although other important reasons including the greater speed of knowledge erosion, and the higher tendency of drop out amongst young people from low socio-economic backgrounds and especially those from low-income households were identified, (Maringe et al., 2020), they were never presented as critical reasons to keep the universities open despite the pandemic. What hurts the economy or business rather than what hurts the poor tends to be given a great deal more attention in policy decisions in crisis moments.

2. Online teaching and learning; this discourse offered the methodological option that countered the need for face-to-face teaching and learning and which promoted the continuation of the educational project despite the onset of the pandemic. Face-to-face instruction has been the enduring pedagogical practice in the majority of universities across the world because of its assumed potency as a tool for the social construction of knowledge (Vygotsky & Cole, 1978) and its assumed contribution towards personally meaningful constructions and deep understanding of knowledge. The immediate presence of the teacher, including that of other learners, has always been assumed to engage students in deep learning. Encompassing representation, evaluation, and optimisation as its critical elements, the chances of promoting deep learning (Sarker, 2021) are enhanced in face-to-face instructional modalities. In any case, the mere fact of becoming a member of the university community offers the rare opportunity for marginalised groups in society to intermingle with other more privileged groups,

resulting in some form of socio-cultural integration between diverse groups of students.

However, developments in Open and Distance Learning (ODL) in recent years, which have led to enhanced interaction between and amongst students in asynchronous teaching and learning situations and the greater personalised instructional approaches in online teaching which catered to diverse student personality types has created opportunities for much deep learning to be achieved in these modalities (Lee, 2021).

When online teaching and learning were introduced as pandemic pedagogy, its mechanisms and application were largely alien to both staff and students in higher education. The fact that many universities are settling back to face-to-face teaching and learning in the post-pandemic era is a clear indication of a sector retracting back to its comfort zone, by design or default.

Not many universities considered television and radio, which are available to more poor students but opted, instead, for digital platforms in online modalities. While this would immediately suit children of the middle classes, online teaching and learning presented formidable challenges to poor students with limited Wi-Fi and internet access, and many of whom live in congested and noisy spaces which hardly promote learning efficiency. Research on how to promote the development of resilient institutions in the post-pandemic era identify the strengthening of online teaching and learning rather than its abandonment as a key priority (see for example, Chiramba, 2021).

3. Blended teaching and learning; the idea of blended teaching and learning signifies the mixing or integration of a number of approaches which engage students in deep learning encounters, at the personal, cohort, and community levels. The pandemic opened up opportunities for developing university teaching in these ways. However, its full potential has not been realised in post-pandemic university environments. First, the notion of blended appears to be limited to the use of face-to-face and online teaching and learning and these appear to be developed separately rather than in integrated ways. In many universities, parallel courses have been developed for face-to-face instruction

and for online teaching and learning. The idea is that, when face-to-face instruction becomes threatened as happened when the pandemic broke out, universities will have ready online instructional courses to ensure learning continuity in the face of future institutional closures. To that end, universities have only succeeded in developing alternative instructional modalities which they can turn to in times of crisis. The full scope of blended instruction has not been achieved in many of our institutions. The blending of traditional teacher-led instruction with individualised or group digital-led tasks, which can be extended to working with outside school groups such as parents, blog communities, and social media networks can be developed to provide opportunities for real deep learning of school or university content material. Such a level of integrated learning is the aim of blended teaching and learning. We do not have any hard evidence that this is happening to any meaningful extent in universities, especially in the global south.

4. Hybrid teaching and learning; like blended teaching and learning, the idea of hybrid modalities has thus far had limited though growing application in the current university environments (Ulla & Perales 2022). First, the origin of hybridity is in the biological and agricultural sciences. Essentially it implies the mixing of traits from two independent organisms in order to create new strains which have a better capacity to withstand adverse environmental conditions and perhaps even increase yields. Hybrid teaching and learning simply creates opportunities for students to learn the same content in different ways. For example, some students might be receiving face-to-face instruction while other students who may have been unable to come to class on the day will get the same lecture online. Conferences have increasingly adopted this modality and it is also finding some application in actual university settings.

Towards the Multimodal Instructional Environment

We teach a wide variety of student types in university classrooms. However, according to Biggs, university teachers tend to assume some homogeneity amongst their students. The use of the ubiquitous lecture assumes that students are good listeners who give focused and undivided attention to every word spoken by the lecturer. Most people only understand 20% of what they are meant to learn through listening. However, listening and reading can increase the amount of learning to about 30%. This can further be enhanced to 50% if listening, reading and watching are combined. When all these are combined and discussion is added, students' learning efficiency is further increased to 70%. When students are given an opportunity to relate all the learning into their personal experience, the learning gains are further increased to about 85%. Finally, when students are given an opportunity to teach someone else about what they have learnt, their net learning worth increases to 95%. In any case, students are a heterogenous group, bringing a variety of personality types which respond variously to different ways of teaching. For example, millennials largely harbour distrust of higher education, and believe the tech-world has much more to offer them in terms of understanding the world. We soon lose them if we base instruction entirely on direct teaching.

Multimodality essentially recognises the incremental learning opportunities created by exposing students to a variety of learning experiences. Typically, a multimodal lecture or course might involve direct instruction; directed reading of text; watching video on the content of instruction; group discussion with both individualised and collaborative tasks; small group instructional tasks at the barest minimum, amongst others.

The benefits of multimodal teaching are vast and include (see Giannakos et al., 2019):

- Provides learners with opportunities for engaged learning, rather than simple passive learning.
- Enhances the quality of learning and understanding.

- Provides opportunities to students to reflect on real-world experiences and issues.
- Develops students learning skills beyond simple listening.
- Expands teacher and student creativity.
- There is a persistent and enduring sense of novelty that pervades the teaching and learning encounters.
- It enhances students' learning outcomes.
- It caters to varieties of student's learning styles and so is instructionally inclusive.

The implications of multimodal teaching and learning: two main levels are recognised, both of which might have substantial funding and organisational implications:

At the institutional level:

- Substantial investment in building smart campuses where students have access to the internet and Wi-Fi both in the classrooms and laboratories but also in outside campus learning spaces.
- Staff capacity building and continuous professional development programmes.
- Investment in a wide variety of educational videos and U-tube access and utilisation by both students and staff.

At the instructional policy and curriculum level:

- The use of multimodality to create course content.
- The use of multimodality to develop instructional pedagogies.
- Developing assessment as both a tool for learning and for measuring learning gains.
- Trans-disciplinarity organisation of instruction to avoid instructional repetition and strengthen cross-disciplinary convergences and learning.

Beyond the Pandemic: Towards a More Resilient Higher Education

The COVID-19 pandemic has taught us several lessons, key of which is that: the project of education especially higher education is far too important for nations and cannot be summarily shut down like hotels and train services in the face of global crises; in its pre-COVID-19 state, higher education was precariously unequal and constructed around the assumptions and needs of the middle class; the over reliance on face-to-face instruction, despite the avowed strengths, became its greatest weakness in the face of the pandemic; while the turn to online teaching and learning ensured learning continuity, in the post-pandemic era, the momentum towards its refining and further development has all but fizzled out. The consequences of this loss in momentum are likely to be far reaching especially in the context of any future crises; while new concepts and ideas have been introduced in the sector, such as online and hybrid teaching and learning, their current application has done little to reconstitute higher education as a resilient sector. We end this book with a set of assertions which can be used as hypotheses to stimulate further research for the transformation of resilient higher education.

1. Developing online instruction to complement the existing traditional face-to-face instructional modalities does little to eradicate the existing inequalities in higher education.
2. The current parallel development of online teaching and learning does not achieve the integrated instructional modalities expected from blended or hybrid teaching and learning.
3. Diverse learning and teaching modalities driven by the idea of multimodality has the power to enhance cognitive justice, improve learning outcomes for all students; and narrow the gaps in epistemological access between groups from different classes and socio-economic backgrounds.
4. Developing multimodality is never a cheap option for creating resilient educational systems. The financial investment in building smart campuses will be substantial yet the benefits to be accrued will be long lasting and recurrent.

5. Multimodality as a pedagogical option has important implications for instructional policy and curriculum reform in universities.
6. Multimodality will drive substantial staff capacity building and more importantly, continuous professional development of staff and the training of students to maximise their learning gains from the diverse learning encounters.
7. Done correctly, multimodality in higher education will help create a more crisis proof, strong and cognitively just, and resilient higher education in the post-pandemic era.

Conclusion

The post-COVID-19 era presents an opportunity for higher education institutions to reimagine teaching and learning. By leveraging the transformative changes and emerging trends, educators can create engaging, inclusive, and learner-centred educational experiences. However, addressing the challenges and ensuring equitable access to quality education for all remains crucial. The prospective view outlined in this paper serves as a foundation for further research and discussion on the future of higher education in the post-pandemic world.

Multimodality in education refers to the use of multiple modes or forms of communication and expression to enhance learning and understanding. It recognises that individuals have different preferences for receiving and processing information, and it seeks to accommodate those preferences by incorporating a range of modalities. Traditionally, education has predominantly relied on verbal and written modes of communication, such as lectures, textbooks, and written assignments. However, multimodality recognises that learners have diverse learning styles and preferences. Some individuals may learn better through visual representations, while others may prefer auditory or kinesthetic experiences. By incorporating multiple modes, educators aim to engage learners more effectively and provide them with a variety of ways to access and demonstrate knowledge.

By incorporating multimodal approaches, educators can create a more inclusive learning environment that caters to diverse students' needs. It can increase engagement, motivation, and comprehension by providing multiple entry points and allowing students to choose the modes that work best for them. Moreover, multimodal assignments and assessments can enable students to demonstrate their knowledge and skills in different ways, fostering creativity and critical thinking. Overall, multimodality in education recognises the importance of accommodating different learning styles and preferences, providing learners with multiple ways to access, process, and communicate information.

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