




Developing country educators' experiences of higher education teaching during COVID-19



Authors:

Monique Keevy¹ 
 Grietjie Verhoef¹ 
 Meredith Tharapos² 

Affiliations:

¹Department of Accountancy,
 College of Business and
 Economics, University of
 Johannesburg, Johannesburg,
 South Africa

²School of Accounting,
 Information Systems and
 Supply Chain, College of
 Business and Law, RMIT
 University, Melbourne,
 Australia

Corresponding author:

Monique Keevy,
 mstrauss@uj.ac.za

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Orientation: Higher education institutions (HEIs) globally were required to transition from face-to-face to online learning to circumvent lockdowns, social distancing and other public health interventions during the coronavirus disease 2019 (COVID-19) pandemic.

Research purpose: This study examined the experiences of developing country educators of higher education teaching during the COVID-19 pandemic.

Motivation for the study: The study aims to understand the influence of the pandemic on the delivery of a quality programme to enable developing country HEIs to better withstand challenges arising from future social disruptions.

Research approach/design and method: The study employs a qualitative methodology comprising semi-structured interviews with educators from HEIs situated in two African developing countries.

Main findings: The findings of this study indicate that educators were able to transition to online offerings amid the pandemic and employ new tools, systems and innovative delivery methods, despite the lack of contingency plans. However, the digital divide was amplified for their student cohort because of the cost and reliability of the internet and the absence of suitable devices. This in turn resulted in educators often resorting to teacher-centric teaching practices. The findings also highlight that online assessments were compromised in terms of quality and integrity.

Contribution/value-add: Far from being just a disruption, the pandemic is an indication of the urgent need to build sustainable HEIs for educators to deliver quality academic programmes to assume their intellectual responsibility toward society.

Keywords: COVID-19; developing country; digital divide; higher education; information technology; online learning; social disruption.

Introduction

During the past two years, the coronavirus disease 2019 (COVID-19) pandemic (hereafter 'the pandemic') disrupted global education and in particular higher education (Tharapos 2021). This extreme social disruption transformed the way teaching and learning environments utilised information communication technologies (ICTs) and accelerated higher education institutions' (HEIs) awareness of the importance to devise timeous plans for flexible and innovative academic programmes (Burt et al. 2021). The consequences of the COVID-19 outbreak, which included lockdown restrictions, social distancing and other public health interventions to curb the spread, resulted in a sudden and unplanned transition to online learning for many contact-based institutions across the globe (Hodges et al. 2020; Sangster, Stoner & Flood 2020).

Previously, only a small portion of students globally were taught online (Sangster et al. 2020). Approximately 220 million students were disrupted by the pandemic, resulting in a rapid transition to online learning (United Nations Educational, Scientific and Cultural Organisation [UNESCO] 2021). The pandemic amplified the need to examine the online delivery of academic programmes and HEIs' responses to a new learning environment (Sangster et al. 2020). This resulted in a plethora of studies exploring the impact of the pandemic on educators (Beatson et al. 2021; Burt et al. 2021; Drinkwater 2021; Sangster et al. 2020) and students (Agormedah et al. 2020; Burt et al. 2021; Drinkwater 2021; Kaisara & Bwalya 2020; Mpungose 2020; Reid et al. 2021; Sturm & Pinsent-Johnson 2021) at HEIs.

Crandall (2021) observed that the existing gaps in higher education between developed and developing countries have widened during COVID-19, as high-income countries can better

withstand social disruptions because of greater state funding (UNESCO 2021). The sudden pivot online was also particularly difficult for educators in developing countries because of the digital divide (Mpungose 2020) as ICTs became the crux around which formal education evolved (Hussein 2021). Therefore, this study adds to the preceding literature by exploring the experiences of higher education teaching during the pandemic of developing country educators situated in two Southern African Development Community (SADC) HEIs. Their accounts of teaching during the pandemic represent a unique perspective, which can assist other developing country HEIs to better withstand challenges arising from future social disruptions, which has not yet been reported in the literature.

The findings of this study are of relevance to educators delivering academic programmes in other developing markets, as over 85% of the world's population lives in the developing world (World Data 2022). India, for example, has the highest number of universities worldwide, followed in the third to the sixth position by other developing countries (Statista 2022). This study is, therefore, relevant to educators in developing markets experiencing the digital divide.

Also central to this study is that pedagogy, whether provided through contact offerings or virtually, should employ student-centred teaching practices (Anastasiadis et al. 2021; Biggs 1999; Ishii & Soltani 2021). However, prior to the pandemic, educators in developing markets relied heavily on large-group teacher-centric lectures as the predominant method of teaching (De Villiers & Fouché 2015; Okafor 2012) and expressed scepticism towards alternative delivery methods (Strauss-Keevy 2014). As a result of the pandemic, educators were required to innovate and embrace new technologies as HEIs gradually introduced blended learning models (delivery of the programme using online and face-to-face activities), including those in developing countries (Tharapos 2021).

This study therefore comes at a timely juncture for three reasons. Firstly, the need to employ a range of technology-driven approaches in the delivery of academic programmes using HEI's virtual platforms while maintaining the quality of the programmes (Reid et al. 2021; Tharapos 2021). Secondly, the imperative to adopt student-centred methods in teaching practices (Anastasiadis et al. 2021; Biggs 1999; Ishii & Soltani 2021). Thirdly, given the potential of future sudden social disruptions (Hodges et al. 2020), it is prudent to build upon the experience from the pandemic to inform the development of research-led approaches to teaching and learning aimed at building sustainable HEIs for educators to deliver quality academic programmes to assume their intellectual responsibility towards society (Marinoni, Land & Jensen 2020). The findings of this study, which canvasses the views of educators in developing countries towards teaching and learning during the pandemic, will assist developing country HEIs to better withstand challenges arising from future social disruptions.

Literature review

The pandemic affected HEIs globally, with many campuses closing and cancelling their contact-based offerings (Ali 2020; Hodges et al. 2020). In response, HEIs instituted measures to keep students and educators safe by pivoting to emergency remote teaching during the pandemic (Hodges et al. 2020; Sangster et al. 2020).

Emergency remote teaching is different from 'normal' online academic programmes offered prior to the sudden pivot online. The former serves as a temporary shift to fully online delivery and assessment methods because of a social disruption, where educators would have otherwise delivered their academic programmes using contact or blended learning offerings (Hodges et al. 2020). While normal online academic programmes are as a result of 'careful instructional design and planning, using the systematic model for design and development' and making use of the employ of instructional designers (Hodges et al. 2020:n.p.). In contrast to this, careful design and planning were largely absent in most cases of online learning during the pandemic (Hodges et al. 2020). Consequently, the sudden pivot online revealed emerging vulnerabilities in higher education systems globally that cannot be ignored or dismissed (Ali 2020; Tharapos 2021).

In Africa, for example, 24% of HEIs cancelled teaching because of the disruption caused by the pandemic (Marinoni et al. 2020) and only 29% of African HEIs were able to transition to online learning, compared with 85% of HEIs in Europe (Marinoni et al. 2020). Certain authors view that this result was anticipated given the digital divide experienced in Africa (Mpungose 2020; Tamrat & Teferra 2020). In removing distance, time and borders, ICTs have, to an extent, brought 'knowledge equality' to the world (Altbach 2004). Access to knowledge has long disseminated from the origin of production across the world from the highly industrialised countries and technology leaders, such as Israel, Japan and South Korea to adoptive markets. Several developing countries, especially in Africa, continue to experience the digital divide, making it difficult to keep abreast of the constant advances in ICTs (Mpungose 2020; Tamrat & Teferra 2020). Africa, for example, has the lowest internet penetration rate globally (46.8%) among the seven regions of the world (Internet World Stats 2022).¹ Similarly, Holmner (2008) observed the absence of the pillars of information and knowledge societies in developing countries, resulting in a challenge for educators and students keeping abreast of the constant advances in ICTs (Mpungose 2020; Tamrat & Teferra 2020).

In the same line of thinking, several recent studies emerged during the pandemic reflecting on the digital divide as the main hindrance to students transitioning from contact-based offerings to online learning amid COVID-19 (Agormedah et al. 2020; Kaisara & Bwalya 2020; Marinoni et al. 2020; Mpungose 2020). Given the lack of devices (printers, WI-FI routers,

¹The second lowest region is Asia with a 67.4% internet penetration rate and North America the highest with a 93.4% internet penetration rate (Internet World Stats 2022).

computers, laptops or tablets²) (Agormedah et al. 2020; Mpungose 2020), students, for example, mainly accessed academic content via their mobile phones (Kaisara & Bwalya 2020). Other factors that further impaired students' learning experiences (amid the pandemic) were the cost of data to access HEI's learning platforms and students' home environments often not being conducive to online learning (Kaisara & Bwalya 2020). Students were also impeded by their capacity to use HEI's learning management systems (LMSs) (Mpungose 2020) and other ICT learning platforms (Kaisara & Bwalya 2020; Mhlanga & Moloi 2020). Contrary to the aforementioned view, Mpungose (2020) argues that students are 'digital natives' as they entered the world 'when technological expansion was ubiquitous and widely adopted' globally (Ali 2020:20). Students are therefore challenged by the digital divide and not by their capacity to use online technologies effectively. Investment is nevertheless urgently required to upgrade technology at both university and community levels (Mpungose 2020). Basic technological infrastructure needs to be available to ensure equitable access to educators and students (Crandall 2021). This is echoed by Marinoni et al. (2020) who point to infrastructure and online access as two essential prerequisites to transit to online teaching and learning.

Besides the digital divide, there are various cost implications in utilising ICTs: not only investment in technology, but equally important is the investment in educators' capacity to utilise the technologies effectively (Andiola, Masters & Norman 2020; Watty, McKay & Ngo 2016). Higher education institutions need to be mindful of these caveats. Educators with existing knowledge and experience of online platforms and teaching practices were able to transition more seamlessly to online offerings during the pandemic (Ali 2020), resulting in less disruption for their student body (Ali 2020). Furthermore, pedagogical methods and tools will not have the requisite impact until educators have a pedagogical understanding of their ability to improve the learning experience (Ali 2020; Bjarnason 2007). The online teaching environment should foster student interaction, collaboration and ownership (Ali 2020). A shift is required from teacher-centred to interactive, student-centred approaches (Anastasiadis et al. 2021). Ishii and Soltani (2021), for example, argue that even with Zoom's tools and capabilities, 'teaching and engagement go hand in hand'. It is about how and what educators 'do in their online classrooms that matter most' (Ishii & Soltani 2021:10). Online teaching and learning are thus a 'pedagogical and instructional challenge', which requires adequate educator preparation in terms of, *inter alia*, curriculum development and delivery and assessment methods (Ali 2020:22).

Online learning involves more than a one-way delivery from educator to student using an LMS and internet access (Drinkwater 2021). Reid et al. (2021) call for educators to ensure that students are well supported in an online learning environment, notwithstanding the challenges involved.

Furthermore, educators must employ different online delivery and assessment methods (Reid et al. 2021). This line of thinking suggests that students are expected to be active participants in the online learning process (Drinkwater 2021; Reid et al. 2021), which is often evident within planned online delivery models (Hodges et al. 2020). Yet during the pandemic, students were found to keep their camera turned off and their microphone muted. They therefore tended to participate passively in the online classroom, leading Ishii and Soltani (2021) to refer to the online class environment as a 'room full of wallflowers' (p. 8). This typically results in less engagement by students, poor performance and a reduced learning experience (Reid et al. 2021).

Also evident in the sudden disruption caused by the pandemic was unethical practices with online assessments (Bilen & Matros 2021; Kapardis & Spanoudis 2022). Although students' unethical practices are not new to higher education (Bilen & Matros 2021), Chirumamilla, Sindre and Nguyen-Duc (2020) found that both students and educators perceive cheating to be easier in the online environment. When employing online assessments, certain HEIs used proctoring software to mitigate unethical student behaviour (Bilen & Matros 2021), while others favoured the employ of a student honour code and delivering academic integrity lectures (Kapardis & Spanoudis 2022). These measures sought to curb academic dishonesty, which undermines the quality of an academic programme and threatens the credibility of academic records (Awad, Zogheib & Alazemi 2016).

The move to online offerings was 'unprecedented and staggering' (Hodges et al. 2020:n.p.), thus resulting in HEIs not having contingency plans or policies to guide the use of online teaching and learning amid the pandemic (Mpungose 2020; Sangster et al. 2020). It is therefore both necessary and timely to examine the experiences of educators in swiftly transitioning from traditional contact-based delivery modes to online offerings during the pandemic, to ensure quality academic programmes continue to be delivered given the inherent challenges experienced during social disruptions, which are likely to be a future occurrence (Hodges et al. 2020).

Research method

The educators in this study were employed at HEIs in developing countries in South Africa and Namibia. In both South Africa and Namibia, the governments declared a nation-wide lockdown to curb the spread of COVID-19 (Amesho, Ahmadi & Lucero-Prisno 2020), resulting in a sudden transition to online learning (Kaisara & Bwalya 2021). These two developing countries were selected given that they are both situated in the SADC and experience similar internet penetration rates. South Africa and Namibia, for example, have an internet penetration rate of 57.5% and 52.1%, respectively (Internet World Stats 2022).³ Furthermore, both HEIs are public universities. The educators from both

2. Laptops and tablets are often provided free of charge by HEIs in South Africa. However, these are often sold for personal benefit, given the students' socio-economic challenges (Mpungose 2020).

3. Some of the lowest internet penetration rates are experienced by other SADC countries such as Malawi (13.8%), Democratic Republic of Congo (17.4%) and Mozambique (20.3%) (Internet World Stats 2022).

HEIs teach on professional undergraduate academic programmes and did not have previous experience with online offerings prior to the pandemic.

Following ethics approval, semi-structured interviews were conducted with developing country educators engaged in higher education teaching during the pandemic. The purpose of the interviews was to develop a deeper understanding of how educators experienced the pandemic on the delivery of the academic programme (see Appendix 1 for the interview guide). Semi-structured interviews were considered an appropriate method to collect participants' deeper views, as they give structure while allowing room for interviewees to elaborate upon their own experiences and opinions (Ellington & Williams 2017).

Interviewees were invited to participate via email and were selected to ensure a reasonable distribution of demographic profile and an equal number of participants from the two HEIs. A series of 10 semi-structured interviews were conducted with developing country educators. Data saturation seemed to occur after the ninth interview. However, a further interview was conducted to ensure an equal split of participants from each institution and to further endorse the saturation of data (Guest, Bunce & Johnson 2006). Saturation of data is often evident when very little new information is produced, in comparison to the time and effort expended to attain the information (Merriam 2009).

Microsoft Teams was used to conduct the interviews because of the logistical and safety risks posed by the pandemic. Each interview was recorded (with the permission of interviewees) using the Microsoft Teams recording tool and transcribed *verbatim* by a professional transcriber. To protect their anonymity, interviewees are referred to by way of an interview number. The interviewees were encouraged to respond openly to the questions, with prompts and further questions for clarification. These responses elicited rich descriptions of educators' experiences of the pandemic on the delivery of the academic programme.

The interview transcripts were analysed thematically using a qualitative computer software package, ATLAS.ti (version 9). ATLAS.ti is often employed by qualitative researchers where deep levels of analysis of text-based data are required (Merriam 2009; Saldaña 2013). Thematic analysis involved a six-step phased approach as detailed by Braun and Clarke (2006). Step 1 involved reading and re-reading the data to become familiar with the data while noting initial ideas. In step 2, text (phrases or sentences) was highlighted to develop codes to describe the content. This was followed by collating the data relevant to each code. In step 3, themes were generated by identifying patterns in the data and collating codes from step 2 into potential themes. In step 4 themes were reviewed to ensure that they were useful and an accurate representation of the data. This involved checking if the themes were linked to steps 1 and 2 and determining if anything was missing and whether the themes accurately

represented the data. Step 5 involved performing ongoing analysis to refine the name formulated for each theme to ensure that it was succinctly and easily understandable. Lastly, step 6 produced a report comprising the evidence of the themes through the selected extracts, relating them back to the research objective of the study (Braun & Clarke 2006). The analysis performed in ATLAS.ti produced five themes, with several categories as presented in Table 1.

This study used member checking as a validity measure (Creswell 2012; Yin 2009). The researchers employed a process where one participant from each HEI checked the accuracy of the account. This involved taking the findings back to the participants and asking them to confirm the accuracy of the report and whether it was a complete and realistic account of their experiences of teaching in higher education during the pandemic (Creswell 2012). Section 'Empirical findings' details the themes that emerged from the analysis of the data.

TABLE 1: Coding frame used for developing country educators' experiences of higher education teaching during COVID-19.

Themes	Categories	Examples of codes
Bridging the gap between the 'haves and the have-nots'	Digital divide experienced by students	Digital divide, cost of data, reliability of the internet, access to devices, bridge the gap, data issues, network issues, printed material prior to COVID-19
	Absence of student devices placed constraints on educators' teaching	Mobile phone use, Microsoft Teams, completing online assessments
The lack of contingency plans during the pandemic	Online learning amid the pandemic was delayed	Unprepared, educator resistance, educators struggled with IT platforms, devising a plan
	Contingency plans not in place for educators and students	Student contingency plans, educator contingency plans, IT department support, management support and/or leadership, learning curve, continue teaching and learning amid pandemic
Online learning resulted in a predominantly teacher-centric environment	Predominant use of pre-recorded lectures	Delivery methods prior to pandemic, pre-recorded lectures, data issues, cost of data, no participation with videos, teacher centric
	Limited interaction during live online classes	Students disappear, weak attendance
	Educators' desire for engagement	Student engagement, face-face preference, blended preference
Quality of online assessments compromised	Students' integrity questioned with online assessments	Student integrity, ways of cheating, physical assessments, proctoring software
	Administering quality online assessments (setting, grading, invigilating)	Setting online assessments, grading online assessments, administering online assessments, online assessments, physical assessments
Benefits of online learning to educators' teaching practices	Use of innovative student-centred online methods	Student-centred online delivery, Microsoft Teams
	Accessibility of online teaching and learning	Flexibility, accessibility of online teaching, online consultations
	IT supported teaching practices	Sharing screen, Microsoft Teams, venue constraints, IT supported teaching practices, online platforms

COVID-19, coronavirus disease 2019; IT, information technology.

Empirical findings

Bridging the gap between the 'haves and the have nots'

All educators indicated that the digital divide experienced by students influenced their teaching practices negatively (Interviewees 1–10). This was succinctly conveyed by one educator:

'How do I impart that knowledge? How do I bridge the gap between the haves and the have nots?' (Interviewee 9)

Prior to COVID-19, the digital divide was already evident in developing nations *inter alia*, through the absence of hardware, the availability of internet access, WI-FI access and the cost of data (Coetzee, Leith & Schmulian 2019; Tamrat & Teferra 2020). However, the pandemic 'amplified' these challenges as 'it exposed' the pre-existing issues that 'were there, but we didn't take them seriously' (Interviewee 9). The 'challenges' included the cost of data and reliability of the internet, the absence of suitable devices, and the difficulty of online assessments (Interviewees 1, 2, 3, 4, 6, 8, 9 and 10).

Interviewees mentioned that prior to COVID-19, students 'had face-to-face classes', that is, they attended in-person lectures and tutorials. Therefore, 'there was no need for any data' accessed via the internet (Interviewee 1). With contact offerings at the South African HEI, 'students received printed course packs containing slides, modules, assignments and tutorials' (Interviewee 9). While at the Namibian HEI, educators explained that students were required to download course packs from e-learning platforms and the data required to execute this 'was manageable' for most students (Interviewee 1).

Interviewees stated that during the lockdown period, students were required to download course content, attend Microsoft Teams and/or Zoom lectures and tutorials, consult with educators and tutors remotely and conduct their assessments online (Interviewees 1, 2 and 10). The increased use of online platforms and the internet created a data issue for students in terms of cost and reliability (Interviewees 1, 3 and 10):

'In Namibia, data is very expensive and it's also not that reliable in all the corners of the country.' (Interviewee 1)

A similar sentiment was expressed by interviewees in relation to the South African HEI (Interviewees 2, 4 and 8):

'... [O]ur environment here, some of the students actually come from faraway places, where they do not have connectivity. It's actually a big issue.' (Interviewee 4)

Another challenge 'amplified' (Interviewee 9) during COVID-19 was the alleged 'absence' of suitable devices to access online content, attend online classes and conduct online assessments. Interviewees conveyed that most students did not own tablets and laptops and sometimes did not even have a smartphone (Interviewees 1, 2, 6 and 8). The reasons put forward ranged

from the cost of the devices, devices not functioning effectively or their devices being stolen (Interviewees 2, 6 and 8):

'Every university student that comes to university they get tablets. But then two years later or a year later they will tell you that that that tablet is no longer functioning or that tablet was stolen by someone.' (Interviewee 8)

The 'absence' of suitable devices placed serious constraints on the educators' teaching in an online environment (Interviewees 2 and 8). Students resorted to using their mobile devices for online activities (classes, tutorials, working through course content, assessments, etc.) (Interviewees 1, 2, 6, 8 and 9). 'Online activities would be easier for students if they have more suitable devices', such as the formerly issued tablets, laptops or smartphones (Interviewee 2) as those devices were equipped with infrastructure to log onto Microsoft teams (Interviewees 6 and 8).

The lack of access to suitable electronic devices compromised the completion of online assessments (Interviewees 1, 2 and 6):

'At the beginning, some of them were using cell phones, which are a bit difficult to use in terms of having this available doing an assessment because the cell phones have their own limitations.' (Interviewee 6)

The lack of access to suitable devices was one of the reasons cited for the return to physical assessments (see Section Quality of online assessments compromised). Along the same line of thinking, educators 'had to bring in the students who could not afford the data, who did not have devices, to be taught face to face' (Interviewee 10).

The lack of contingency plans during the COVID-19 pandemic

Interviewees observed that their institutions did not have contingency plans for a pandemic such as COVID-19 (Interviewees 1–10). Comments substantiating this view included: The pandemic 'took everyone by surprise, because I don't think that the university was actually prepared for that kind of situation' (Interviewee 4), 'it was difficult because we were not prepared' (Interviewee 2), 'the pandemic caught us unawares' (Interviewee 2), 'last year was a mess' (Interviewee 1), 'we were not ready for this' (Interviewee 6) and 'it was a disaster, because there was no plan in place' (Interviewee 9).

Interviewees conveyed that their move to an online learning environment amid the pandemic was delayed for the following reasons: Firstly, educators showed 'some resistance to going online because' they 'didn't really understand' or they were not aware of the various functionalities contained within previously used online platforms (Interviewee 3):

'It was a little bit delayed, and I think because we were sort of at a backlog. So, there were all these different platforms that were being presented to us in Teams, Zoom, some different functionalities within the Moodle platform itself, and then these YouTube videos and you were kind of at a loss for what exactly to do.' (Interviewee 3)

'... [M]ost of us we were actually not sure of what we were supposed to do. Yes, we did have Blackboard, I think we now moved on to Moodle, we did have all these things, but we were not using them. That's the issue. So, most of us were not prepared.' (Interviewee 4)

Interviewees remarked how adapting 'to the new way of teaching' (Interviewee 1) resulted in them halting their teaching at the start of the pandemic:

'Last year there was a point where we stopped lecturing for a month, still devising a plan as to how can we best utilise our resources.' (Interviewee 9)

Even though the teaching was halted to allow educators to transition to the new way of teaching and assessment, interviewees described the learning curve:

'For us we were being trained on the job, you go to a session today on how to set a paper online and then tomorrow you've got a test. So, the online learning experience, the transition, there was no transition, it's a disaster.' (Interviewee 9)

Moreover, contingency plans were not in place for the types of student challenges experienced in developing countries. For example, interviewee 2 reported:

'There were technical glitches in terms of the students didn't have devices, they didn't have data, so the university had to make contingency plans, give them data and all that. So those were the glitches that we faced initially.' (Interviewee 2)

Even though interviewees described eventually coming to grips with the online system in terms of class and assessments, they believed this was not always the case for students:

'Then lecturers, they can get the system, but the students themselves didn't have enough time to phase them in into this world.' (Interviewee 9)

The educators did not receive support in terms of data provision (Interviewees 5 and 10):

'We were kind of on our own at home and there was just these expectations for you to just continue delivering. I had to buy my own data, I never had Wi-Fi at home, I never saw the need for it.' (Interviewee 5)

On the other hand, the interviewees stated that they did have access to devices (laptops) to continue teaching online (Interviewees 6 and 8). Support issues were observed in terms of information technology (IT) staff, as support only became available for a few months into the pandemic (Interviewee 6). Interviewees also voiced concern regarding leadership during the initial stages of the pandemic:

'There was no strong leadership which gave guidance.' (Interviewee 9)

'It took us very long before we could figure it out because the institution was like, we will make an announcement and it took really long before a pronouncement was made to say we are going to have our classes online.' (Interviewee 10)

However, 18 months into the pandemic, the interviewees mentioned that their teaching practices had improved

because of trial and error (Interviewee 2) and their steep learning curve (Interviewee 3). Further comments substantiating this view include: 'We are doing a lot better because we learnt from our mistakes' (Interviewee 1), 'now we're at a better place' (Interviewee 3) and 'I think we are better off now' (Interviewee 4).

Online learning resulted in a predominantly teacher-centric environment

Educators referred to using, *inter alia*, collaborative group assignments, group discussions, tutorials, student presentations, guest lecturers, case studies, role-plays, experiential learning activities, pre-reading and class discussions prior to the pandemic (Interviewees 1–10). However, amid the pandemic, educators discussed resorting to the main delivery method of pre-recorded lectures (Interviewees 1, 3, 4, 6, 7, 8 and 10), a method found to be teacher centric (De Villiers & Fouché 2015; Okafor 2012):

'To be honest, I want to say I've become a traditional lecturer again.' (Interviewee 5)

The reason for mainly using pre-recorded lectures is that students did not attend live online classes, given the data impediments they experienced as outlined in Theme 1. Students, instead of attending live classes, opted for pre-recorded lectures that they watched late at night (Interviewees 2, 3, 4, 5, 8 and 9):

'What they do is they have this night surfer sort of package and they're only able to access the internet from midnight.' (Interviewee 3)

'A lot of students complain about the data being expensive, then they don't attend the day classes and they opt to listen to the recordings, in their own time, which I assume will be, after 12, because then usually most network providers give you free data to use around those times.' (Interviewee 8)

According to interviewees, the biggest concern with the pre-recorded online lectures was that students 'don't have an opportunity to participate in class, they don't have an opportunity to ask questions' (Interviewee 7, also mentioned by Interviewee 8). Furthermore:

'... [I]t's very difficult to get a sense of the students, you're just talking to yourself, and you don't know whether they actually understand as nobody is actually raising a hand or asking a question in the chat box, like the functionality that you would have had in Teams or Zoom. So, it's really just sort of a monologue.' (Interviewee 3)

They believed that from the students' perspective, viewing pre-recorded online lectures is 'like you're listening to radio, so there is not that interactivity' (Interviewee 9, also mentioned by Interviewee 4). They also stated that watching pre-recorded lectures had a negative influence on the timing of consultations. For example, students 'would have consulted better immediately when you are still in that topic' (Interviewee 8) rather than delaying the consultation to some later point after they had watched the earlier pre-recorded content.

For those students who attended live online classes, it was not always evident that they were 'paying attention' (Interviewee 7) as they were often unresponsive (Interviewees 4, 6 and 10), leading one participant to refer to them as 'present absent students. They are present, they have logged in, but they are actually absent' (Interviewee 4):

'... I've seen especially in this environment when it's not face to face, sometimes students actually come and log in. You will be thinking that they are listening to what you what you are saying but they are not actually, they just log in and then they disappear.' (Interviewee 4)

Delivery of live online classes was also marred by weak attendance. Recipient educators revealed that only 45% – 50% of registered students attended the live classes (Interviewee 9). This was corroborated by another, mentioning that only half of the class attended live lectures (Interviewee 7) and 'a lot of them don't show up', by referring to only '15–20' students that show up for class (Interviewee 5).

Educators can employ student-centred delivery methods in the live online classes (Interviewees 1, 2, 3, 4, 5, 6, 7, 9 and 10). Yet students 'disappear' or don't 'show up' in the online environment, resulting in the predominant one-way teacher-centric delivery of the academic programme.

Given the aforementioned views, educators still preferred either blended learning (Interviewees 2, 4, 8 and 10) or going back to contact offerings (Interviewees 1, 3, 5, 6, 7 and 9). The preference for contact offerings was underpinned by educators' desire to engage students in the classroom using interactive student-centred teaching practices (Interviewees 3, 4, 5, 6, 9 and 10).

Even though the pandemic forced educators to move to online delivery, many still held a strong preference to 'be in each other's presence, and the spontaneity of interaction and relationship that physical proximity allows, cannot be duplicated through technology' (Trow 2007:276), as illustrated here:

'I would still prefer the physical contact because I can see my students and I can sort of try and read their facial expressions and their body language, and that sort of leads me in my delivery of the content, whether I need to just back up a little bit, go through something again, or whether this is completely old news to them and I can just move through the content a lot faster.' (Interviewee 3)

Quality of online assessments compromised

Interviewees revealed that the use of online assessments compromised the academic programme in terms of the quality of administering online assessments and students' integrity in online assessments. Educators, for example, used the following phrases to refer to online assessments: 'it was a "disaster"' (Interviewee 9), "this was a big issue" (Interviewee 10) and "the biggest glitch we had was the online assessments" (Interviewee 1).

With regard to designing online assessments, this proved especially difficult for educators (Interviewees 1, 4, 7, 8 and 9):

'There was a problem with assessment because we didn't know how to set up assessments for online.' (Interviewee 1)

Another educator remarked on the various difficulties they experienced when trying to set and grade online assessments:

'... [W]hen you are writing physically it's the question paper which you set, the level of difficulty and the length, and when someone is typing, we are still trying to find that balance as to the length of the question, is it adequate, is it too long? And then the other issue would be the calculations, how do we bring in the calculations? Some calculations are easier to do during contact than with the computer, from a student's perspective. And then the teaching software, the teaching aids which are there, your Blackboard, your Moodle, they are not assessment-friendly, if I have to put it like that when you look at the layout. And then this submission, how do we submit, how do we mark, you see? So even us, the lecturers, we had to relearn how do you mark an online assessment?' (Interviewee 9)

In addition, interviewees conveyed that students' integrity was questionable during the pandemic as 'a lot of cheating' (Interviewee 4, also discussed by Interviewees 1 and 9) was happening during online assessments, as some students 'would form groups to write assessments' (Interviewee 5, also conveyed by Interviewee 10), often aided by 'WhatsApp' (Interviewee 9). Interviewees stated that they did not 'know who is on the other side and we do not have any way of verifying who is on the other side' (Interviewee 10). Interviewees described how they grappled with how to best structure online assessments to avoid unethical practices by students:

'We didn't look at all the ways that they could cheat.' (Interviewee 1)

'... [T]hat risk, we can't eliminate it.' (Interviewee 9)

'There's a lot of cheating that happens with our online assessments and also, we as a department, we did not actually trust that our system was actually working.' (Interviewee 4)

Globally, HEIs had similar experiences with unethical student practices during online assessments (Bilen & Matros 2021; Kapardis & Spanoudis 2022). However, in some developed markets, HEIs invested in proctoring software to assist in mitigating unethical assessment practices (Dendir & Maxwell 2020; Sangster et al. 2020). This type of software was not employed at the HEIs in this study during the pandemic. Interviewees were unaware of this type of software (Interviewees 2 and 4) and described struggling with the transition to online assessments:

'... [E]ven up to now I wouldn't say online assessments are working. Like the system that we have now, there was a lot of confusion, especially at the end of the first semester and last year, end of our second semester, where it was not really clear what is it that we needed to do with regards to conducting of assessments.' (Interviewee 7)

Interviewees resorted to using physical assessments for their students during the pandemic (Interviewees 2, 4, 8 and 10). They made 'special arrangements' by obtaining management permission to administer assessments in person by observing COVID-19 protocols (Interviewee 2, also mentioned by

Interviewee 4). Various reasons were cited for moving back to physical assessments, such as those mentioned earlier, *inter alia*, the lack of access to student devices (Themed 1), students' unethical assessment practices and the lack of educators' capacity to set and grade online assessments (Interviewees 1, 4, 8 and 9). One of these reasons is illustrated here:

'I think for us, the reason why we want them to write face to face, is how comprehensive assessments are, which if you had to put it on online, would be very difficult. So, the fact that our assessments are very comprehensive, and the students need to deal with a huge volume of reading and then assess the requirement, the easier route to do it is face-to-face than online.' (Interviewee 10)

Benefits of online learning to educators' teaching practices

Most of the interviewees discussed using some innovative student-centred delivery practices during their online teaching, such as quizzes, discussion forums, break-away rooms for smaller group interaction, class discussions, pre-reading to further enable classroom discussions, tutorials and presentations (Interviewees 1, 2, 3, 4, 5, 6, 7, 9 and 10). Here is an example of how an educator ensured that students remain engaged during online classes:

'During lecture time, I have some quizzes just to keep them engaged in class. So, in terms of ensuring that they're engaged, I sometimes have what you call breakout sessions on Teams, give them a question, let them discuss, when they have discussed you, all come back to plenary and then they give you feedback. Just to make sure that they are active, and they are also listening to what you're saying.' (Interviewee 4)

Even though there were several challenges in the transition to online learning (as detailed in the prior themes), interviewees also attested to the benefits, such as the accessibility of online learning for the educator (Interviewees 1, 3, 4, 6, 8 and 10):

'I teach from anywhere and I don't have to be at my office to deliver. I can deliver from anytime, anywhere, so it makes things easier.' (Interviewee 8)

The accessibility of online learning also applied to the student body through, for example, consultations (Interviewees 2, 7 and 10):

'Students can easily arrange online consultation with you, not even coming to office, wherever they are, and you can quickly put an online consultation room that now you consult.' (Interviewee 2)

Students were also able to listen to pre-recorded lectures at a later stage or recoup the recordings to facilitate learning, which was not generally employed in the contact environment (Interviewees 3 and 6). Educators were able to 'share information instantly' with their student body in the online learning environment, given the technological advancements amid COVID-19 (Interviewee 5, also mentioned by Interviewee 10). Furthermore, referring to technological advancements in the online learning environment:

'... [T]here's so much to still discover, and it's so powerful these online tools, and it can actually provide us with so much more time to do other stuff if we just use this technology correctly.' (Interviewee 5)

Interviewees also stated that technology tools supported their teaching practices (Interviewees 2, 4, 6, 7, 8 and 10). Interviewees commented that 'technology has actually improved the way I do my teaching' (Interviewee 4). Moreover, interviewees referred to the benefits of sharing their screens using Microsoft Teams (Interviewees 2, 4, 7 and 8) and described it 'as a useful tool' (Interviewee 2). Interviewee 8, for example, observed the benefits of using Google during online classes and sharing their screen to enable students to 'see what I'm actually talking about. Then they can picture that'. Similarly, another remarked on the benefits of sharing their screen to demonstrate Microsoft Excel calculations when teaching topics such as capital budgets and valuations (Interviewee 2), which was not apparent in the face-to-face classes as HEI's infrastructure did not facilitate this (Interviewees 2, 5 and 8).

An interviewee also observed that when presenting contact classes, he or she had difficulty with the IT equipment:

'Whereby you go to class you want to teach; the projector is not working. Now you're wondering my slides, do I have to write on the board?' (Interviewee 10)

Lastly, one interviewee observed that online learning had solved constraints with respect to venues. With online learning the 'problem of venues has already been resolved', as both lectures and tutorials can be conducted via Microsoft Teams (Interviewee 7).

Conclusion, limitations and areas for future research

The objective of the study was to ascertain the experiences of educators in developing countries of higher education teaching during the COVID-19 pandemic. This study found that educators had the capacity to transition to online offerings amid the sudden disruption. This was evident in the employ of new tools and systems (Microsoft Teams, Zoom) and the use of innovative online delivery methods (such as quizzes, discussion forums, break-away rooms, class discussions and presentations) to enable online teaching and learning amid the pandemic notwithstanding the significant challenges posed by the digital divide.

This study points to the challenges and opportunities of this rapid transition to online teaching and learning environment as experienced by educators given their student cohort. With regard to the former, this study found that COVID-19 amplified the digital divide at developing country institutions and negatively influenced educators' teaching practices. Firstly, the cost of data and reliability of internet infrastructure resulted in low live class attendance and participation in the innovative teaching methods employed. Educators believed that the reliance on pre-recorded lectures by students was a return to teacher-centric didactics. Consequently, interviewees stated that they preferred contact offerings because they could physically engage with students in the classroom using more interactive, student-centred

teaching practices. Secondly, another challenge amplified during COVID-19, was the absence of suitable devices for students to access online content, attend online classes and conduct online assessments. Thirdly, assessments proved difficult amid the pandemic. Interviewees perceived that the use of online assessments undermined the quality of the academic programme as it compromised students' integrity and ethics in completing online assessments. Moreover, interviewees struggled in administering online assessments (setting, grading and invigilating). Given these aforementioned reasons, interviewees reverted to physical assessments to mitigate the amplified 'integrity and ethics gap' and their own lack of capacity in administering online assessments.

Notwithstanding the challenges of online learning, the educators in this study acknowledged its benefits. Interviewees referred to the increased accessibility online learning provided for both educators and students. Pre-recorded lectures could be used by students to revise the content at a later stage, which was generally not undertaken by students in contact learning environments, unless students recorded face-to-face lectures. Consultations could be arranged remotely using Microsoft Teams and/or Zoom. These tools also aided teaching practices by allowing educators to share their screens with the class to showcase Microsoft Excel calculations.

This study is subject to limitations. This includes inherent subjectivity and potential response bias associated with interview data. The relatively small sample data limits the generalisability of the results. However, this study was purposefully designed with a small number of participants to generate a rich and detailed understanding of the experiences and perceptions of educators employed at HEIs in developing countries during the pandemic. Future research could be extended to students to provide a more holistic understanding of the influence of the pandemic on the learning environment in developing countries.

Far from being just a disruption, the pandemic is an indication of the urgent need to reset the higher education sector in developing countries. The short-term challenges of the pandemic, as revealed in this study, should guide future developments to build sustainable HEIs and ethical student cohorts and to support educators in delivering quality academic programmes to students. The educators in this study were able to eventually navigate the rapid transition to online learning amid the pandemic. However, this may not have been the case for a large contingent of educators in other developing countries and particularly on the African continent (Marinoni et al. 2020), because of the low internet penetration rate (Internet World Stats 2022). Consequently, the state's fiscal policies should focus on teaching infrastructure able to sustain teaching under all conditions of disruption. Specific to online learning, the state should, for example, support IT infrastructure (Mhlanga & Moloï 2020; Mpungose 2020).

Importantly, HEIs in developing markets should not simply return to the practices followed prior to the pandemic, as social disruptions may again occur in the future (Hodges et al. 2020). Therefore, there is a need for emergency remote learning to become part of educators' skills set for both delivery and assessment. Administering of online assessments was particularly difficult for developing countries. Educators should thus be supported by online assessment training, and HEIs should invest in proctoring software to mitigate unethical student behaviour (Bilen & Matros 2021).

During the pandemic, students were found not to have immediate access to reliable data and suitable devices for online learning. Therefore, it may be necessary for educators to have flexibility in their teaching practices (i.e. flexibility of assignment and assessment deadlines, the employ of different modes of delivery and assessment), which should be provided for in course and institutional policies. HEIs therefore need not only resilient education systems but also flexibility during times of social disruptions.

Furthermore, HEIs need comprehensive disruption planning on all levels of university operations. Higher education policies should root out students' unethical behaviour through non-negotiable student honour codes (Kapardis & Spanoudis 2022). HEIs should position management capacity in structures to lead a comprehensive disruption strategy to sustain teaching during future disruption, to enable HEIs (through educators) to fulfill their intellectual responsibility towards society (Marinoni et al. 2020).

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Authors' contributions

M.K. was the researcher of the original dissertation from which this article is substantially derived. M.K. was responsible for the first version of this article. Later versions of the article were edited and additional research added by both G.V. and M.T. Both G.V. and M.T. were the co-supervisors of the original dissertation.

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The data are available upon reasonable request from the corresponding author M.K.

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Appendix 1

Interview guide – broad areas of inquiry:

1. In what ways, if at all, has your organisation's adoption of online learning during COVID-19 impacted your delivery of the academic programme?
2. In what ways, if at all, has the digital divide experienced by students impacted your teaching?
3. In what ways, if at all, has the advancements in information technology enhanced your teaching?
4. What is your preference, contact-based academic programmes or online offerings and why?