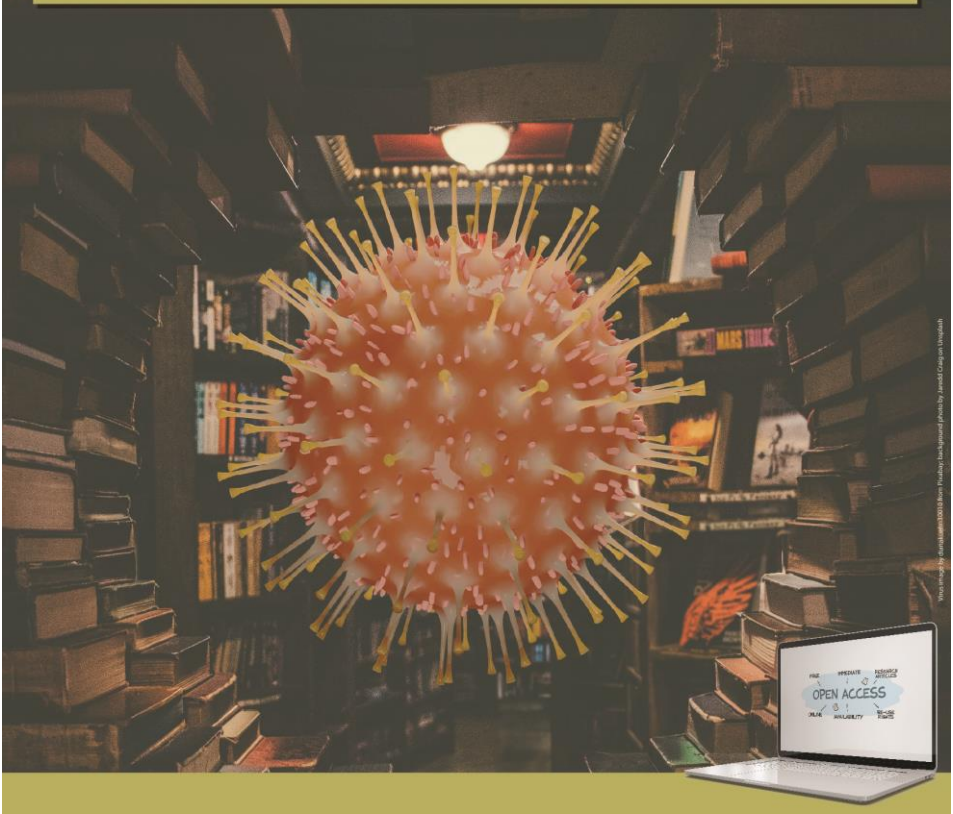
Learner and Subject at the Dawn of Digital Research-Led Teaching and Learning in the Time of COVID-19

Editors:
Johannes A. Smit, Nhlanhla Mkhize,
Nobuhle Ndimande-Hlongwa, Labby Ramrathan



***Alter*nation African Scholarship Book Series, Volume #04**

*Alter*nation African Scholarship Book Series (AASBS)

*Alter*nation research groups have made decisive and far-sighted knowledge production contributions in the interdisciplinary Arts and Humanities arena for more than twenty-five years. From 2020, it adds the *Alter*nation African Scholarship Book Series (AASBS) to its research outputs system. Via its incisive thematically-focused inter-, multi-, and trans-disciplinary, as well as digitally-informed, research approaches, the AASBS not only advances the frontiers of knowledge in Africa's institutions of Higher Learning in designated focus areas, but also critically generates scholarship of, by and with the people(s) of our continent. Historically the research draws on the rich traditions of interactive African intellectualisations, from its earliest civilisations, through struggles for liberation and freedom, to independence and growth. It opens up future epistemic opportunities through intellectual initiative and resourcefulness, while critically contributing to the international advancement of knowledge on all relevant levels. Contributing to research-led constructive, transformative and substantial discourse development in our programmes and disciplines, it also aims at impacting the well-being of our people foundationally and all-inclusively in the present. All forms of scientific and social challenge which Africa's societies and communities face, need to be problematised and researched in the Arts and Humanities, in the interest of cooperative and conscientious responsible knowledge generation and foundational conceptual and methodological research impacts. We serve the hopes and aspirations of the people of Africa.

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A list of 2020 published titles follows overleaf

*Alter*nation African Scholarship Book Series (AASBS)

Ramrathan, L., N. Ndimande-Hlongwa, N. Mkhize & J.A. Smit (eds.). *Re-thinking the Humanities Curriculum in the Time of COVID-19. Volume #01.*

Ndimande-Hlongwa, N., L. Ramrathan, N. Mkhize & J.A. Smit (eds.). *Technology-based Teaching and Learning in Higher Education during the Time of COVID-19. Volume #02.*

Mkhize, N., N. Ndimande-Hlongwa, L. Ramrathan & J.A. Smit (eds.). *Teaching and Learning in Higher Education in the Time of COVID-19. Volume #03.*

Smit, J.A., N. Mkhize, N. Ndimande-Hlongwa & L. Ramrathan (eds.). *Learner and Subject at the Dawn of Digital Humanities Online Research-Led Teaching and Learning. Volume #04.*

Manik, S. (ed.). *From High-risk Sports to Sports as High Risk: Crisis, Capitulation and Creativity during COVID-19. Volume #05.*

Singh, U.G., M.W. Phiri, P.S. Reddy & P. Appavoo (eds.). *Global Trends in Management, IT and Governance in an E-World (E-MIG 2019 International). Volume # 06.*

Amin, N. & R. Dhunpath (eds.). *(Re)Learning to Teach in the Context of Crises. Volume #07.*

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Learner and Subject at the Dawn of Digital Research-Led Teaching and Learning in the Time of COVID-19

Editors
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*Alter*nation African Scholarship Book Series Volume #04

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Preface

Emerging first in Wuhan, China, followed by its spread to other parts of the world, COVID-19 has had governments globally, systematically initiate a variety of forms of intervention, to curb its spread. These include lockdowns, the restriction of movement, forms of social distancing and sanitizing practices, as well as the requirement that citizens wear face-masks. Since the responses took place according to regional exigencies and directives, and were not uniform and equally comprehensive, internationally, they have also had diverse effects. Ranging from shortcomings in medical and health care provisioning, through economic downturns and fears of the increase in practices of governance surveillance, to the disrupting of schooling and tertiary education systems, sports, and cultural and religious events and practices, COVID-19 bodily, mentally, materially and socially, destructively affected the whole world as we know it. Apart from its continued deadly impacts, and barring the arrival of universally effective vaccines, the spectre of COVID-19's expected second surge with the arrival of winter in the northern hemisphere, also have populations across the world readying themselves to learn to live with the presence of infection on a continuous basis.

Given this very brief and though limited scenario, this Preface provides the context for the first four volumes of the *Alter*nation African Scholarship Book Series (AASBS).

Focused on the impacts of COVID-19 on the Higher Education sector, especially from curriculum perspectives, at all levels and a sample of disciplines and subjects, the first four volumes were in principle conceptualised by the Humanities Institute (HI) and the *Alter*nation Editorial Committee (AEC), on 31 March 2020.

This initial project problematisation has grown into twelve research groups with seven AASBS volumes, and five *Alter*nation Journal issues in production. Indications are that even if the world is rid of COVID-19 through vaccination – which might not happen in the near future – its impacts will be lasting. In the short to medium term we may also have to learn to live with the reality of the presence of the pandemic, and possibilities of infection and potential resultant death. These dynamics are being traced in the research, in, as well as outside

academe, as we learn to transform and adapt to new realities, possibilities, risks, and drawbacks, of digital education and media.

In many ways COVID-19 brought communities of teaching and learning closer together across the usual social and professional divides. The hope is to ensure the optimal wellbeing for the greatest possible number of our fellow human beings (*Ubuntu*), and for staff and students to benefit from available existing and (digitally-) constructed resources. This outcome motivates each moment of our collective research-led teaching and learning, even though distance and disease threaten all.

The research produced by the *Alter*nation research groups constitute a small part of how academia attempts to both engage the conundrums and provide academic leadership amidst the effects and educational and learning opportunities of COVID-19. And for this we want to thank the lead-editors and their teams, as well as all the colleagues from across southern Africa who have responded positively, and affirmatively to our call.

And for their endeavor, and sleepless days and nights of rescuing our sick, and caring for those passing away, we want to dedicate these, the first number of volumes of our *Alter*nation African Scholarship Book Series, to our courageous medical staff, those who provide comfort, relief and succor to our sick and those passing away, as well as the singular worker, mostly unrecognized, that kept the wheels of life and optimal wellbeing turning. Thank you, colleagues. And go well. *Siyabonga, hamba kahle!*

Prof. Johannes A. Smit
Editor-in-Chief: AASBS

Contents

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Editorial

Learner and Subject at the Dawn of Digital Research-Led Teaching and Learning in the Time of COVID-19

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I

We can read the first part of the title of this volume of our *Alter*nation African Scholarship Book Series in two ways, viz. 'learner *as* subject', and learner as subject *in interaction with* an academic subject, in the time of COVID-19.

Important for the focus on *leaner as subject*, is to think of both the professor-teacher as learner, as well as the student-learner as subject. With the advent of COVID-19, its social and institutional effects, and the concomitant requisite migration of teaching and learning to online platforms and offerings via digital information systems, technologies and media, professor/lecturer as well as student were repositioned as learners. Therefore, in the wake of the systematic movement from banking knowledge systems (Freire 2007; Moran 2014), where these still existed, to learner-centred knowledge generating

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systems of research-led study, we also have to embrace this step of equalising the power balances between lecturing and student engagement of learning, not only with regard to subject-specific problematisations, but especially with regard to the enhanced capabilities required for embracing digital media in online teaching and learning. Consequently, both lecturer and student had to cross the knowledge-power boundary that still separated traditional tertiary in-person, face-to-face teaching and learning, and become interactive learners. It is noted that, in most cases, and because of the under-preparedness of academe to various degrees, these transformations at least initially, took on the forms of emergency remote teaching and learning.

It is true that with the lecturer's assumed superior knowledge and skills in an academic subject, i.e., knowledge power, the balance was still gravitating towards the side of lecturer initiatives. For this, lecturers have had to upskill and enhance the utilisation of digital information systems, technologies and media in online teaching. To note, too is that in these emergency transformations, and due to the rapid increase in the number and upgraded quality and capacity of digital instruments, many of these technologies' full capacities remain under-utilised. Furthermore, the ball is still in the hands of the lecturer-learners to upskill and to continue to learn how to use these technologies to their full capacity and for the full benefit of the qualitative e-Learning experiences of student-learners. Thus, this challenge will remain, and will also remain quite exciting, now that we have passed the crisis and emergency tipping points of the impacts of COVID and teaching and learning of 2020.

On the other hand, student-learners themselves have had to cross the boundary to a very high degree, if not exclusively, to learn from online and/or offline, or by means of digital media learning, during actual presentations, ranging from Moodle, Kaltura, and PowerPoint presentations to digital media accessible via social media, Zoom, Loom, and Microsoft Teams, amongst others. Whilst the exploration and testing of digital technology posed a challenge to optimal teaching use of technology for lecturers, it was even more so for student-learners, especially those who struggled with quality access to online learning lectures and resources, due to data challenges or because of students living in remote areas with weak or limited digital and social media access.

Collectively, this broad-based transformation in teaching and learning also meant that, in most cases, we have had to think further than a blended

learning environment and practice, where we had to rely virtually entirely on the most democratic systems available, such as voice chat, that would reach the greatest number of students, while using the least data, in remote and poverty-stricken settings. For assessment, this reality also posed numerous challenges to remote student-learners, whose only means of test, assignment and task submissions, in some cases, were via cell phone-typed text, and even cell phone photos of hand-written text or remote video.

These are some perspectives on the challenges that all lecturers, as well as student-learners, have had to negotiate, and about which much more has been written on in our AASBS volumes, which focus on *curriculum* (Ramrathan *et al.* 2020), *digital learning* (Ndimande-Hlongwa *et al.* 2020); and *teaching and learning* as such (Mkhize *et al.* 2020).

In the next section of this Editorial, we focus on the lecturer-learner as well as student-learner, as subjects, *in interaction with* the academic subject. Even though the digital initiatives also feature prominently in this volume, this volume of AASBS primarily interrogates the nature of the actual details of the transformations, inside subjects, that COVID-19 and the migration to remote online teaching and learning have effected.

II

By the necessary switching to primarily digital teaching and learning, each academic has had to also engage their curricula, and more specifically aspects of their subject content. As is well known, and as numerous studies on TPACK have shown, it is not only competence in technology knowledge (TL) and pedagogical knowledge (PK), that is needed, but also content knowledge. Moreover, it is common knowledge that these knowledges need to intersect, and are often represented in Venn-diagram format (cf. Arek-Bawa & Reddy 2020 in this volume).

Furthermore, and this is the question that we have been raising, and are raising with this volume of AASBS, viz. the transformations in subject content knowledge (CK) in the intersecting with TL and PK, respectively, but also regarding the central intersections of all knowledges combined. On this score, it is to be noted that the volume engages with a *sample of ten subjects* – history, media, graphic design, music and dance, health sciences, commerce education, rural students' studies, differently abled studies, and social work. To note, the volume specifically raises questions regarding the transformations

within the subjects regarding rurality – where there is often even greater poverty than in the city, as well as a dearth of digital technology and data availability, including broadband access – as well as challenges differently abled student learners encounter in the exclusively online teaching environment. These two focuses are most aptly addressed in two chapters in this volume (cf. Myende & Ndlovu 2020; Khumalo, Singh-Pillay & Subrayen 2020, in this volume).

Interactively, each chapter then provides a sample of the considerations that impacted the switch to digital teaching and learning, including pedagogy and/or content knowledge in ten subject areas. They show not only 'how' but the 'what' academics as learners have had to deal with not only in respect of curriculum, but also, more specifically, with subject matter, or knowledge and content that have to come into play in the new realities of remote teaching and learning.

Many questions still remain. We expect more research to be undertaken on this latter question, focused on the content knowledge transformations of the disciplines and their sub-disciplines that have been and are taking place, as well as questions as to how permanent such transformations are, in the short, medium, and longer term. In addition, to continue to think interactively, we also need to consider how academic disciplines have their own subjectivity, their own agency. These are not cast in stone, and can be historicised usefully if we follow some of the archaeological and genealogical methods in thought that Michel Foucault developed and deployed in his research on the order/s that the history of the subjects that constituted humankind, and in his case, Western man (cf. Foucault [1963] 1973; [1970] 1982; and [1975] 1979 for instance). The question, from this perspective, concerns the nature of the epistemic break that COVID effected in the sciences at the beginning of 2020, in the Human and Social Sciences, specifically in the broader context of decolonial discourse. The volume on teaching and learning (Mkhize 2020) in this series, recent publications in Mkhize and Nobles (2020), on *Afrikan-centred Psychology*, upcoming publications in March (2020), on *Decoloniality and Decolonial Education: South Africa and the World*, and Smit's earlier '#Decolonialenlightement and Education' (2017) may provide some pointers.

Furthermore, if we reflect on the concerted efforts that university lecturing staff have made in engaging curricula and knowledge content, and the broadly speaking scientific knowledge field is taken into consideration, the

thinking and deliberations taking place at the outset of the initiation into digital teaching and learning, as well as how these deliberations are continuing, it augers well for the humanities, and humanising subjects. Not only has COVID accelerated the migration to online teaching and learning; it has also opened new vistas of new possibilities that the information systems and technologies have for teaching and learning as such. Therefore, in a nutshell, the African Digital Humanities (ADH) have received a welcome boost over the last year for subjects to migrate onto online platforms, a boost that will be lasting in many ways. As driver, COVID has opened new vistas for thinking and rethinking our disciplines. In view of the challenges posed in real life, under COVID, and post-COVID, the digital humanities' impacts on learner capacity and capability development have been upscaled. Multi-form interactive communication systems are explored and developed in the interests of fostering and developing subject-specific, but also trans-subject knowledge-power knowledge and skills capacities and capabilities (cf. Smit & Chetty 2018a; 2018b; 2018c).

If the above provides a few perspectives on the first part of the title of this volume, then the final part focuses on the nature and dynamics of 'research-led teaching and learning in the time of COVID-19'.

III

The notion of 'research-led teaching and learning in the time of COVID-19' wishes to emphasise the indelible link of research to teaching and learning, and vice versa. Here we wish to make three points.

Firstly, since it is in the nature of the university to teach and learn from knowledge produced through research, and from 'knowers that know' (Nhlanhla Mkhize's term) – not from handbooks produced for the purpose of banking knowledge systems outcomes or rote learning – it follows that all lecturing staff in (South) Africa would have produced knowledge for purposes of teaching and learning as normally required, throughout 2020, the year of COVID-19. They might have taken the impact of COVID to greater or lesser degrees into consideration in such research. Even so, if it had been designed to feed into the continuing development of curricula knowledge content, they should have considered the technological and/or pedagogical challenges and opportunities that arrived with the advent of COVID, social distancing, lockdowns, and remote learning. Much is to be expected across the sciences

pertaining to what has happened, and how the research-led teaching and learning have impacted knowledge content during 2020, and probably into the future.

A closely related perspective is given by the fact that knowledge production is not a single-minded endeavour, or practised by the traditional idea of the lone and solitary ivory tower professor. Rather, knowledge production is a collaborative, interactive, and integratively focused practice in communities of praxis. On the expertly minded knowledge producer and the collaboratively minded interest group knowledge production continuum, COVID-19 requires and catalyses collaborative interaction on joint research ventures within the broad-based space of the equally disruptive impacts of COVID-19 and their problematisations. Research-led teaching and learning take place through knowers that know collectively. This includes lecturers, students, and the communities that universities serve. Responding effectively and through research-led teaching and learning practices to COVID-19 require the utilisation of, and affirmation of cooperative community sustaining and socially supporting educational interactions.

Secondly, there is much evidence – also in the numerous book and journal volumes currently being produced in South Africa – that such engagements of content knowledge are also collaborative and it involved teaching teams and/or inter-, multi-, and trans-disciplinary teams. Colleagues have had to interact in their clusters on how the migration of subjects and courses to online platforms and digital media have generated changes and transformation in the subjects' knowledge content. *How* were the subjects' knowledge contents negotiated, what were the reasons (*why*?) certain knowledge contents and not others were preferred, *who* took the leadership in such endeavours, and *what* were the results and outcomes? What were the (epistemic) breaks that have had to be negotiated, if any, in the discourse inherent to subjects and in the broader discursive formations, also including relevant institutions, foundations, alliances, and associations or scholarly fraternities and organisations. What were the presuppositions – and prejudices – that provided the conceptual and value parameters for such re-negotiations of course content and its pedagogies and technologies? (cf. for instance Sewchurran & Pannach (this volume). Who, indeed, has put up their hands and taken the lead in these endeavours(?), also in some of the emergency recurriculation and accompanying academic template developments that were required by some universities.

There were some generic concerns related to existing curricula and outcomes requirements. But there were also subject-specific knowledge challenges that lecturers had to engage. These have ranged from actual content in lecturing presentations, actually prescribed materials, which had to be made available online, or had to be replaced with online sites and materials that would be more accessible to students who could not benefit from actual office hours or other face-to-face interaction with lecturing staff in lecture halls or with tutors, and who were also deprived of access to libraries. Therefore, an actual content re-think was required in view of how best to present the subject and its outcome requirements, in teaching and learning, learner enskilling in learning and knowledge production that adds to the knowledge content of subject matter as such, as well as the student-learners' envisioned intellectual comprehension and grasp of the subject matter.

Finally, in our focus on research-led teaching and learning, we raise the matter of history, which also links up with the first chapter of this volume – Noble and Hiralal's 'The Black Death and COVID-19: The Value of Studying Pandemics in Historical Perspective'. The reality of pandemics in world history must be factored into academe in a more consistent and comprehensive way. On the one hand, again, this needs to be factored into how the pandemic impacts our academic subjects and programmes, especially in the inter-, multi-, and trans-disciplinary approaches and inter-disciplinary negotiations of course content and approaches. Research is needed for this. Further research focused on the actual ecological conditions that generate pandemics, but their socio-cultural impacts and responses are also needed. This, again, involves research across the disciplines that deals with forms of ecological focus and problematisation – from the natural sciences, through to history, anthropology and religion, and the arts.

Research-led teaching and learning opens several vistas for research and how researched knowledge production is variously accommodated across the disciplines and sub-disciplines.

Moreover, when looking back on the last few months of the impact of COVID-19 on teaching and learning, research that also needs to be done, must engage the actual *experiences* and *critical* and *constructive reflection* of student-learners. In pre-COVID blended learning discourse, important sets of questions were raised on this matter. Many questions, in addition to those asked in this and other volumes, also related to optimal learning with the assistance of information systems and technology, could be focused on student-learner

views and reflections, not excluding the experiences of their subjects, their professors, supervisors, mentors, and tutors, as we go forward. It is our conviction that COVID has made a profound impact in research-led teaching and learning, that the digital humanities provide a very able and opportune discursive framework for the future of the study and learning of our humanities subjects, and that capacitated and enskilled African humanities scholars of the future will appreciate the remarkable transformative interventions humanities scholars have brought about in the broad arena of the fostering of humanist discourse in the era of 4IR and COVID.

As usual, below, we provide the brief abstracts of the different chapters of this volume, for easy reference.

In **Chapter 1, 'The Black Death and COVID-19: The Value of Studying Pandemics in Historical Perspective', Vanessa Noble** and **Kalpana Hiralal** reflect on the dramatic effects the rapid spread of the Black Death plague pandemic had on Eurasia in the 1300s and the strong parallels this historical case study has with today's global spread of the COVID-19 pandemic. Both pandemics had their origins in 'the East', devastating communities across Asia and Europe, forcing people into lockdowns and quarantines. It also severely affected the economies of Asia and Europe. However, there were differences too. COVID-19 is occurring in an age of digital technologies, which have encouraged a wider awareness of the disease and its impact than only via word of mouth. These similarities and differences also allude to how societies reacted and responded to pandemics in diverse geopolitical settings, time and space. In addition, a comparative study of Covid-19 and the Black Death through a historical lens considers the value of studying past pandemics for understanding present-day disease challenges. Furthermore, it highlights how past reflections can help to shine a light on contemporary socio-economic problems such as racism and xenophobia.

In **Chapter 2, 'Negotiating the Possibilities Digital Humanities Offers Media and Cultural Studies for Crisis Curriculum Adjustments in the Time of COVID-19' Anusharani Sewchurran** and **Franziska Pannach** reflect on opportunities and limitations in Media and Cultural Studies, emerging as a result of the COVID-19 lockdown. Media and Cultural Studies

(MECS) curriculum in South Africa traditionally focused on critical or vocational discourses or, in some rare cases, a mix between the two. Vocational training, however, depends on contact, as students do not have access to specialised equipment outside the university space. In such extraordinary times as the COVID-19 lockdown, theoretical portions of MECS curriculum may be repurposed to migrate to online platforms like Moodle, with additional support from WhatsApp messaging, Loom and Zoom. Media educators are confronted with the question of how to replace contact vocational education meaningfully, in this case, Video Production (MECS709). The chapter considers Digital Humanities (DH) as a possible gateway for advancing vocational education without compromising critical thinking. Digital humanities refer to the branch of scholarship using literary and linguistic computing, informatics, making 'creative use of digital technology to advance humanities research and teaching' (Gold 2012: ix). Tools for collaborative writing, data visualisation and text mining are explored as the means of developing digital literacy in MECS. Digital literacy is understood in relation to national articulations (NEMISA, *National e-Skills Summit and Research Colloquium* 2018), where one can use technology to one's own benefit in order to engage actively and productively in the world, the 4IR world. So, using digital storytelling (DST) students will also be asked to respond to content using digital platforms. Digital storytelling ought to be a signature pedagogy for the Humanities, as through this pedagogy, 'the invisible becomes visible, creating a space for empathic listening, learning and understanding' (Benmayor 2012: 524). In our context, the focus on digital storytelling could serve as an important intervention addressing the historical invisibility of most communities, as well as the power these stories must reveal structuration of class, race, gender and sexual orientation. Digital humanities, through the field of digital history, enlivens by enjoining the plurality of the living to participate in refashioning history (Arthur 2008; 2015). The second wave of Digital humanities is said to be 'qualitative, interpretative, experiential, emotive, generative' (Schnapp & Presner 2009), the qualities which hold the promise of realising digital literacy and educational values.

New challenges present new opportunities for curriculum innovation and transformation. The immediate health crisis in South Africa necessitates a swift but resilient response by Higher Education Institutions to save the 2020 academic year, with many institutions shifting their mode of teaching from face-to-face to online contact. In **'Resilient Transformation of Studio-based**

Teaching and Learning in Creative and Design Disciplines towards Cognitive Apprenticeship', Yolandi Burger and **Ria (H.M.) van Zyl** focus on the fact that creative and design studio-based modules might face more challenges that other subjects with this shift in the mode of delivery. Their subject matter still relies heavily on teaching project-based modules through the master-apprentice model in studio environments. The transformation to a virtual learning environment, though, requires of the 'master' to recognise the role of theory and evidence-based design activity to transform learning in these disciplines. The cognitive apprenticeship model has many similarities to the master-apprentice model, but it promotes the necessary power shift from the 'master' to the student. Such a pedagogical shift requires a collaborative, responsive, resilient, and creative approach with deep empathy for both the student and 'master' to ensure the upholding of the integrity of the curriculum as well as the future employability of students graduating at the end of the academic year. This chapter reflects in and on the action of the curriculum transformation response implemented in studio-based modules at a local Higher Education Institution in South Africa. The global health crisis started the conversation of a pedagogical shift in studio-based modules, but it forced South African design educators to take a hard look at the way design has been taught in South Africa.

Titled 'Reframing Teaching African Music and Dance in the Tertiary Education Context: Alternatives and Pedagogical Solutions for Online and Other Forms of Non-contact Teaching in the Face of the COVID-19 Pandemic', Patricia Opondo, Eric Sunu Doe and **José Alberto Daniel Chemane** focused their chapter on the practical study in African Music and Dance (AMD) that has been offered at the University of KwaZulu-Natal (UKZN) for over two decades, since 1996. Always in contact mode with the genre specialist providing either individual or group instruction, learning is by rote where students carefully observe examples presented by the practical lecturer, as well as carefully outlined techniques to be used in mastering the instrument or dance style under study. In the light of the COVID-19 global pandemic, this teaching model had to be immediately reviewed and alternative ways of working remotely with students devised. This educational practice is against the backdrop of indigenous music transmission that is characterised by in-person engagement between a specialist and the tutor/learner. A method that UKZN AMD program uses that works well, is adopting indigenous practices of enculturation from the traditional non-formal contexts for learning African

Music and Dance to the institutional setting in the tertiary education setting – but by still maintaining the wisdom, creativity, interpretation that flourish as a result of this non-formal method of teaching. In addition to the already removed enculturative setting, the new juncture, catalysed by COVID, requires that practical modules are offered via non-contact instruction. The chapter examines the work in two different scenarios of the UKZN African Music and Dance (AMD) program. The first, individual instrumental instruction, in this case, the palm wine guitar from Ghana, explores a re-imagination of its instructional mode within the context of a remote teaching and online assessment. The second example in the context of ensemble work involves groupwork with different members playing percussion, singing and dancing. In this case, the genre/style provided is *ngalanga* dance-drumming from Mozambique.

The next chapter is titled, **'Preparedness of Staff and Students in Utilising Learning Management Systems in Health Sciences as Crisis Intervention during Lockdown' and written collaboratively by Vasanthrie Naidoo, Shanaz Ghuman, Nellie Naranjee, Lavanya Madamshetty, Jamila Khatoon Adam, Maureen Nokuthula Sibiya, and Suresh Babu Naidu, Krishna.** With the recent emergence of COVID-19 and the associated lack of adequate information on the epidemiology, therapeutic management or natural history of COVID-19, Higher Education Institutions (HEIs) around the globe have experienced profound structural changes in teaching and learning. It is important for academics and researchers at Higher Education Institutions to plan and apply appropriate self-directed learning and teaching principles to ensure effective teaching and learning outcomes. This demands a strong sense of responsibility and accountability not only from a student perspective but, more importantly, from the perspective of the learning institution. South African Higher Education institutions have been equally affected, creating a strong sense of responsibility and accountability not only from a student perspective but, more importantly, from the perspective of the learning institution. The dynamics of learning and teaching environment, together with rapid changes in science and technology, have important implications for Higher Education and lecturers and students essential to be prepared to cope with the increasing complexity of Learning Management Systems (LMS). Learning institutions are now at the forefront of developing the skills of enquiry, which encourages self-directedness and life-long learning through robust LMS, such as computer applications for the management, certification,

tracing, broadcasting, and conveyance of informative online courses, tutorial plans, or education and personality development programs. In this chapter, the authors deliberate the preparedness, problematisations and prospects for new insights and responses to infectious diseases, especially COVID-19, that confront the health sciences curriculum within undergraduate and postgraduate programmes.

'Blending Digital and Technological Skills with Traditional Commerce Education Knowledge in Preparation for the 4IR Classroom: The COVID-19 Catalyst' is authored by Orhe Arek-Bawa and **Sarasvathie Reddy.** In an era characterised by unprecedented technological developments in all spheres of life, the current 4th Industrial Revolution (4IR) requires a workforce that can blend digital and technological skills with traditional subject matter expertise. These individuals are also expected to possess other human skills, including problem solving, creativity and critical thinking. Higher education institutions are tasked with the responsibility of producing such graduates for the workforce. Considering the current wave of global lockdown in almost all spheres of life arising from the COVID-19 pandemic, e-Learning is a viable option for education. The University of KwaZulu-Natal (UKZN) School of Education embraces this idea and provides an enabling environment to support virtual learning. However, the extent to which the teacher-education programme is developing student teachers via e-Learning platforms who can thrive in the 4IR digitized school classroom is not apparently clear. The emergence of the COVID-19 pandemic has created a catalyst for academics to test this development. Using the Commerce Education discipline in the School of Education at UKZN as a case study, this chapter draws on the Technological, Pedagogical and Content Knowledge (TPACK) model to determine the extent to which academics have blended digital and technological skills with traditional Commerce Education knowledge. Document analysis was performed on the revised module templates for the Accounting Education 113 and Economic Management Science (EMS) 111 modules that were prepared for emergency remote learning during the lockdown period. The findings make a case for further empirical research to focus on the lived pedagogical experiences of both academics and students who undertook such modules via the e-Learning platform. It is envisaged that this chapter will make timeous theoretical contributions in the light of the COVID-19 pandemic that has catalysed the need to prepare Commerce Education academics and students for the current 4IR classrooms

during and after the pandemic from a technological, pedagogical and traditional knowledge perspective.

Phumlani Erasmus Myende and **Nokukhanya Ndlovu authored 'COVID-19 and Emergency Online Teaching and Learning: A Challenge of Social Justice for University Rural Students'**. As a response to COVID-19, many universities have decided to use emergency online teaching and learning (EOTL) to salvage teaching and learning time and ensure that 2020 academic activities do not collapse completely. Drawing from social justice theory, this chapter provides a critical analysis of how EOTL, as a response to COVID-19 complexities, will not succeed in the South African rural context, hence exacerbating injustices for students from poor rural communities. They argue that students from poor rural communities encounter deep social and economic challenges that will collude to render EOTL in the context of COVID-19 unresponsive to the realities that the majority of students from poor rural communities encounter. To show how EOTL may only favour the already privileged students, they first critically look into the context of rurality in terms of students' access to resources that are critical for learning through EOTL. Secondly, they expose the nature of the familial setup and learning space in South African rural families in order to demonstrate how the setup and space of EOTL are not conducive to learning. While responding to the current event of COVID-19, the chapter contributes to an understanding of how issues that characterise students from poor rural communities may result in the intended innovations aimed at addressing COVID-19 complexities may in fact challenge the principles of transformation that many universities have made part of their visions since the demise of apartheid.

The normal teaching, learning and assessment for students who are differently abled is through contact teaching where they receive support from specialists, peers, carers and the Disability Unit. Specialized equipment and physical support for students who are differently abled are located in the university facilities and are usually only available in the university environment. The COVID 19 pandemic disrupted face-to-face contact teaching and, in an effort to contain the spread of the virus and save the academic year, universities were required to shift to remote online teaching and learning. In **'Reflections on Differently Abled Students' Challenges with Online Learning amidst the COVID-19 Pandemic and Lockdown' Samukelisiwe Khumalo, Asheena Singh-Pillay,** and **Roshanthni Subrayen** respond to the gap identified in the literature and focus on challenges students who are

differently abled face with online learning during the COVID-19 pandemic era. The chapter focuses on one research question: What challenges students who are differently abled faced zith online learning during the COVID 19 pandemic era? We embraced an ecological perspective on learning to (re)think how learning spaces arise through the interdependent interactions of students who are differently abled, with teaching and learning materials, digital tools, lecturers, parents and the community in a multiplicity of contexts that are bounded within an ecosystem. The study was framed by Bronfenbrenner's Ecological System Theory. Zoom was used as a platform for data generation. Data were generated through photo elicitation reflections from three participants from one campus at a South African University. Data were analysed initially by NVIVO to obtain codes; thereafter similar codes were grouped into themes. Our findings illuminate the bi- and multidirectional influences of (f)actors within and across the university, students' home and community contexts that impinge differently abled students encounter with online learning. Our findings highlight the need to forge collaborations across various spaces that students who are differently abled find themselves in. At a theoretical level our findings call for the need to reconceptualize learning spaces.

In Social Work education, field instruction is a component where students learn the practice of social work through delivering social-work services to clients in non-profit organizations, government departments and community settings. Through the field instruction placements, students learn how to integrate theory into practice, to critically examine the knowledge, values, and principles of what they have learned theoretically in a lecture room. Therefore, proper preparation of social-work students to enter practice is critical and it requires supervision by an experienced field instruction social worker of all processes and intervention undertaken by students during their field instruction practice. The role of field instruction in Social work education is recognized as an integral part of students learning and development. In **'Social Work Field Instruction Supervision and Resilience during COVID-19 Lockdown', Thobeka S. Nkomo** seeks to explore and describe how the COVID-19 has affected student social workers' training and what could be considered for the future of social-work field instruction training. As the researcher endeavoured to respond to these questions, she based her discussions on her capacity as a former field instruction coordinator, and on observations and experiences in engaging with students and their supervisors. She also highlights some of the strategies that emerged during the lockdown

period to enhance the supervision interaction, whilst ensuring quality field instruction supervision standards.

Research is key to inform evidence-based practices and responses. The need for research to address the impact of COVID-19 and inform sustainable interventions has emerged as a critical component of the response to this global threat. There is also growing recognition that the current context provides both opportunities and challenges for research efforts at universities, including postgraduate education. In the final chapter, **'Supporting Research at South African Universities during the COVID-19 Crisis: Key Areas for Consideration and Critical Reflections on Responses with a Focus on Postgraduate Education', Urmilla Bob, Suveshnee Munien, Amanda Gumede** and **Rivoni Gounden** draw on a desktop study of university responses to the COVID-19 crisis to establish how institutions are providing administrative and systems-orientated support to ensure the continuation of research, the varied research responses to the COVID-19 threat itself, and key best practices approaches that are emerging that are likely to change the modes and modalities of research training. Additionally, qualitative research is employed to reflect critically on the authors' experiences (as a component of self-ethnography) from the varied perspectives of research management and leadership, supervision and being postgraduate students. Key aspects that are examined in this chapter include process and procedural changes, the capacity and ability to provide administrative support, ethical issues and protocols, financial and resource considerations (including access to funds, and library materials, amongst others), training support (including accessibility to supervisors and internet-based online training materials), and disciplinary-specific sensitivities (that is, different approaches and challenges in relation to lab-based, field-based and desktop based research).

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The Black Death and COVID-19: The Value of Studying Pandemics in Historical Perspective

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Abstract

This article reflects on the dramatic effects the rapid spread of the Black Death plague pandemic had on Eurasia in the 1300s and the strong parallels this historical case study has with today's global spread of the COVID-19 pandemic. Both pandemics had their origins in 'the East', devastating communities across Asia and Europe, forcing people into lockdowns and quarantines. It also severely affected the economies of Asia and Europe. But there were differences too. COVID-19 is occurring in an age of digital technologies, which has encouraged a wider awareness of the disease and its impact than only via word of mouth. These similarities and differences also allude to how societies reacted and responded to pandemics in diverse geopolitical settings, in different times and space. In addition, a comparative study of COVID-19 and the Black Death through a historical lens considers the value of studying past pandemics for understanding present-day disease challenges. Furthermore, it highlights how past reflections can help to shine a light on contemporary socio-economic problems such as racism and xenophobia.

Keywords: Black Death, COVID-19, pandemic, plague, history, epidemic disease

Introduction

We are writing this article at a time when the world is living through one of the biggest public health crises of our lifetimes – the COVID-19 pandemic[1]. Globally, people are being infected by this infectious respiratory coronavirus at an alarming rate, while hundreds of thousands have already succumbed to this disease. Since there is no cure yet, many governments around the world have implemented periods of strict lockdown, including orders to stay at home, and social distancing measures to try to stop its spread. This disease and the accompanying lockdown measures have affected our economies and societies enormously, including our education systems.

Since the outbreak of this pandemic, considerable literature has been published by the medical fraternity on this severe acute respiratory syndrome coronavirus (SARS-CoV-2). Certainly, this scholarship reflects a natural outgrowth from the urgent and determined efforts of infectious diseases experts and science scholars to better understand, for example, the origins and aetiology of this zoonotic disease (Mackenzie & Smith 2020); the workings of this novel virus once it enters the human body (Richardson *et al.* 2020; Wang *et al.* 2020); its spread and effects (Rothan & Byrareddy 2020; Schiffrin *et al.* 2020); testing for possible treatments (Zhou *et al.* 2020; Cao *et al.* 2020); and the huge efforts by scientists around the world to develop vaccines to protect people against this virus (Cohen 2020; Lurie *et al.* 2020). While much has been written on COVID-19 from the perspective of the medical sciences, much less has been published on this disease from a historical perspective (Walsh 2020; Africa Centre for Strategic Studies 2020).

Writing this article has, therefore allowed us to contribute to the literature by reflecting critically on the issue from a historical perspective. As historians, our task is to reflect critically on past events; how varied factors shaped and defined societies. However, it feels strange and a bit disconcerting to reflect on a situation that is happening as we speak, that we are indeed caught up in ourselves, and which in future years will be a subject that will occupy the minds of countless historians. To ground this paper, we have opted to extract a theme, the Black Death, from one of our undergraduate modules, namely 'The Making of the Modern World'. This is one of our foundational History

[1] This chapter was completed in July 2020 in the midst of the first wave of the COVID-19 pandemic in South Africa.

courses at the University of KwaZulu-Natal (hereafter UKZN). This course examines a subject matter that directly speaks to issues we are all currently living through – globalisation – and the impact that certain infectious diseases, amongst other factors, have had on world history. Drawing on material we teach in our course, as well as other secondary and media sources published in recent months online, firstly, we consider some comparisons between COVID-19 and a past devastating pandemic, the fourteenth century's Black Death. Secondly, we examine what value analysing pandemics with a historical lens can bring to understanding present-day disease challenges.

The Black Death and COVID-19: Comparisons

Origins and Spread

The Black Death was amongst the most catastrophic pandemics in world history. It was caused by an infectious bacterium that produced large, painful buboes (lymph node swellings), as well as blackened skin patches, high fever and sometimes coughing up blood (Bray 1996: 48-54). Many scholars believe that this bubonic plague was likely spread across Eurasia by fleas living amongst infected wild rodent communities somewhere in Central Asia, which were disturbed by the Mongol Empire's expansion in the thirteenth and fourteenth centuries. These marauders then spread these infected fleas to different communities, who infected their hosts when they bit them (McNeill 1976: 140-143). Many scientists believe that this bacterium spread so rapidly to different communities during the fourteenth century as it morphed in some areas into pneumonic strains, which infected people's respiratory systems (Hays 2003: 37-40)[2]. This enabled the disease to spread more quickly amongst people through cough and sneeze droplets, making it more contagious and deadly.

The Black Death spread at a time of growing societal interconnections, including long-distance trade, ironically, facilitated by the Mongols, whose empire extended over 6,000 miles across the Eurasian landmass by the early 1300s (Tignor 2008: 462; Abu-Lughod 1989: Chapter 5). Also, people did not have immunity to this disease. The last outbreak of the plague had occurred

[2] Other than bubonic and pneumonic forms, the plague bacillus could also cause blood poisoning or septicaemia.

some 700 years earlier, so for the fourteenth-century Eurasian population, this was a new disease (Bray 1996: 19-47). The earliest recorded outbreak of this disease occurred in Hubei province in Mongol-ruled China, sometime in the early 1330s, before spreading to the rest of China (McNeill 1976: 499). From there, it travelled in a westerly direction, traversing the major overland and sea trade routes, affecting societies in Central Asia, the 'Middle East', and eventually reaching the Mediterranean region by 1347/1348. Once reaching the Mediterranean region, it then travelled by ship to major port cities, such as Cairo, Alexandria, Marseilles, and the Italian city-states, including Venice and Genoa (Watts 1997: 25). From these bustling port cities, the disease then 'proceeded to penetrate almost all of Europe, [North Africa] and the Near East along routes radiating inland from the seaports' (McNeill 1976: 145).

The outbreak of COVID-19 in December 2019 can be compared to the Black Death in several respects. Although caused by a virus, not a bacterium, COVID-19 is a novel virus for our generation, as the Black Death was for the fourteenth century. Therefore, we have no immunity to this virus (*The Guardian* 2020). In terms of symptoms, although there remain key differences, interestingly, there are comparisons too. Although COVID-19 presents more like the flu than bubonic plague did, with fever, body aches, a dry cough and nasal congestion amongst other symptoms, the worst cases of COVID-19 have died after experiencing a continuous cough, high fever and difficulty breathing, similar to the pneumonic versions of the plague (Hays 2003: 39; WHO 2020d). Also, similar to pneumonic plague, COVID-19 is transmitted from infected people to others in close proximity, primarily through a cough or sneeze, or by touching contaminated surfaces, where the virus is then absorbed by an uninfected person when they touch their eyes, nose or mouth (Hays 2003: 39; HO 2020f).

At the time of writing this article, it is also believed that COVID-19 had its first outbreak in Hubei province, China, where the Black Death began. The first known cluster of cases was traced to an area in the city of Wuhan, with early theories linking it to a 'wet market' in this city that sold fresh (including live) species of animals, including exotic species, for consumption and use in traditional medicine preparations (*National Geographic* 2020; *The Guardian* 2020). Similar to the Black Death, many believe COVID-19 to be caused by a zoonotic disease spread from infected animals to humans, which has explained the origins of other disease outbreaks in recent years (Mackenzie

& Smith 2020; WHO 2020h)[3]. Presently, the working theory postulates that COVID-19 likely spread from bats and/or pangolins to humans, though this theory has not yet been proven (Duke University Medical Centre 29 May 2020).

Analogous to the Black Death, COVID-19 circulated within China before spreading elsewhere. During the first few weeks of January 2020, it spread rapidly to neighbouring countries, such as South Korea, Thailand, Japan and Taiwan, and then further afield to the United States. By the end of January, the World Health Organisation (WHO) had declared a global public health emergency, with new cases in Europe, the United Kingdom, Russia, Sweden, and the United Arab Emirates (Taylor 2020). A couple of weeks later, it had reached Egypt and Algeria by 14 and 17 February, respectively (*Aljazeera* 2020; WHO 2020a); Brazil by 26 February (Schwartz 2020) and South Africa by 5 March (National Institute for Communicable Diseases 5 March 2020) as a result of infected travellers returning from 'hotspot' areas in Asia, Europe and the United States. Unlike the Black Death, which reached most of Afro-Eurasia via overland and oceanic routes, COVID-19 travelled much more rapidly across the world due to international air travel. On 11 March 2020, the WHO declared COVID-19 a global pandemic.

Explanations, Remedies and Preventive Approaches

Another set of parallels emerges in terms of explanations for these two diseases. During the fourteenth century, terrified healers, political authorities, religious leaders, and ordinary people confronted with the Black Death's horrors came up with a wide variety of explanations for its cause. This included 'miasmas' or 'bad air' (i.e. environmental pollutants), the misalignment of celestial bodies (i.e. astrological forces), imbalances in the body's humours (i.e. fluids), demonic spirits, or divine punishment from God for people's sins (Bray 1996: 48; Watts 1997: 12-13; Hays 2003: 42-43, 51). Some European communities also scapegoated specific groups of socially marginalised people, such as Jews, lepers and the poor, but also those regarded as morally deviant at the time, such as sex workers; others blamed cats and dogs whom they

[3] SARS (Severe Acute Respiratory Syndrome) is another good example of a zoonotic disease, which originated in bats before spreading to humans. It originated in China in 2002 and spread to at least 26 countries.

viewed as disease carriers (Cohen Jr. 2007: 3-36; Hays 2003: 44, 60). These beliefs led to the persecution (sometimes killing), imprisonment or banishment of such people, and even the mass slaughter of domestic pets.

Although doctors and scientists, at the time of writing, explain COVID-19 as being caused by a virus or microorganism ('germ') that infects the body – a different explanation to those offered in the medieval period – the fact that there remain many unknowns about COVID-19 means that scientists have not been the only ones who have tried to explain it (Watts 1997: 4-5)[4]. Undeniably similar to the plague era, many explanations have been promoted due to panic, fear and ignorance and, unfortunately, some with malicious intent. For example, some have attributed COVID-19 to a deliberate or accidental leak from a Chinese virology lab, others to the development of China's 5G mobile phone network, still others have linked it to billionaire philanthropist Bill Gates, whom they believe had it bio-engineered as a population control measure (Essop 2020; *News24* 2020). Even some political leaders, such as US President Donald Trump, have fuelled conspiracy theories by deliberately labelling COVID-19 as a 'Chinese virus' which has encouraged stigma and xenophobic attacks against Chinese people and led to the destabilisation of US-China relations (*The Conversation* 2020). COVID-19 has also led to anti-migrant sentiment in Europe and assaults on LGBTQ+ communities, whom their ultra-religious accusers view as sinners (*The Week* 2020). Uncannily close to one of the medieval reactions, in recent months, some people have also resorted to getting rid of their pets because of unfounded fears that they might be COVID-19 vectors! (WHO 2020e).

Moreover, in both eras, people tried a variety of remedies. While some people were passive, leaving their fates to their gods, such as many Muslims who viewed the plague as the will of Allah, others took a more active approach (McNeill 1976: 166-167; Watts 1997: 31-32). During the fourteenth century, many people prayed to their gods, participated in religious processions, and went on pilgrimages, hoping for miracles or divine protection (Watts 1997: 10-12; Bray 1996: 48-49). Some fanatical groups in Europe, such as Germany's flagellant groups, even whipped themselves until they bled in public to try to atone for people's sins (Hays 2003: 44, 50; McNeill 1976: 161; Bray 1996:

[4] Germ theory was first proven in the late 1800s. This is also the period when the bubonic plague bacterium, *Yersina pestis* was identified, as well as its vector, infected fleas.

78). In recent months, devout religious communities all over the world have continued to worship and attend services, some in defiance of COVID-19 lockdown orders, and others through virtual means, such as Skype or Zoom, in the hopes that their prayers might protect them (Diseko 2020).

Others have sought assistance from physicians. During the plague era, university-trained doctors focused on changing people's diets, encouraging people to avoid polluting 'miasmas' and bloodletting (Bray 1996: 48-49; *Medical News Today* 2018). Other empirics offered people herbal concoctions, burnt brimstone or frankincense to try to purify the air, recited incantations and gave people charms (Watts 1997: 12-13; Defoe 1722: 30, 32-33). None were effective. Ironically, although modern medicine has made enormous therapeutic strides in the last century, scientists at the time of writing have yet to find a cure for COVID-19 (Radcliffe 2020). Thus far, healthcare workers have provided mainly supportive care for the sick, treating their symptoms and providing oxygen, if necessary, until their patients' immune systems either failed them or helped them overcome the virus. Therefore, similar to the fourteenth-century era, many people today, feeling desperate, have sought aid from various people peddling all kinds of false remedies (WHO 2020b)[5]. So-called 'miracle cures' have varied from taking certain dietary supplements to drinking traditional herbal tonics, to wearing 'virus shut out protection pendants' to ward off the virus (Burdon-Manley 2020; Vitelli 2020; Cook 2020). Some suggested treatments, such as the injection of disinfectants or consumption of methanol or hydroxychloroquine (an anti-malarial drug) touted by US President Donald Trump and Brazil's President Jair Bolsonaro as a 'wonder drug', have also proved harmful to people's health, even causing death in some cases (*The Conversation* 2020; Phillips 2020).

Interestingly, when comparing the past to today, although understanding the workings of contagious diseases was much less developed during the medieval period than today, people in both eras also turned to preventive measures to try to stop the spread of disease. Individual actions included evidence of people fleeing congested cities, barricading themselves in their homes, and doctors wearing beak-shaped face marks, as well as long leather coats and gloves, to protect themselves from 'miasmas' (Watts 1997: 9,

[5] Preventive advice, such as gargling with salt water, drinking hot liquids, eating lots of garlic, and using the sun's UV rays or the heat from hair dryers to kill the virus on surfaces are some examples.

21; Bray 1996: 49; Blakemore 2020). In some areas, governments implemented control measures too. For example, in several Italian port cities, the authorities imposed quarantine measures, which prevented merchant ships from docking at their ports until they had undergone a period of isolation (McNeill 1976: 150-151)[6].

Other authorities sought to protect the public's health by creating 'health committees' or health boards. These committees were tasked with inspecting and protecting food and water sources, regulating refuse and sewage removal, and overseeing the digging of mass graves, when necessary, to ensure prompt burials (Hays 2003: 53-54; Bray 1996: 75; Watts 1997: 8-9, 16). They also isolated and confined the sick to their homes or in 'pest houses'; seized, disinfected and/or destroyed the possessions of the sick; and could put areas into full or partial lockdowns (Hays 2003: 54-56; Watts 1997: 16, 20-21). Lockdowns included restricting people's movements within or between areas; and limiting or prohibiting various economic and social activities, such as markets, eating houses, drinking taverns, festivals and religious gatherings, including funerals (Hays 2003: 44; Watts 1997: 15-22; Defoe 1722: 45-46). Some of these preventive measures had little effect. They were usually carried out haphazardly or too late, while confinement of suspected cases to filthy, crowded pest houses actually helped spread the Black Death (McNeill 1976: 151; Bray 1996: 56).

Today, because people have a clearer understanding of infectious agents' behaviour and have learned valuable lessons from past pandemic experiences, they too have turned to preventive measures to try to limit the spread of COVID-19. While some individuals, such as during the plague era, have chosen to isolate alone or with their families, many governments have taken a much more active role than was the case in the past, by promoting social distancing to save lives and to prevent the disease from overwhelming their healthcare services. Depending on the country, measures have ranged from implementing full to partial lockdowns, enforced by the police or army, which restricted people's movements and activities, and have lasted from several weeks to months (Kaplan 2020). During lockdowns, people have been

[6] These ships were required to anchor in a secluded place, and were not allowed contact with the land until this period had passed. Initially lasting from three to four weeks, this quarantine period was later extended to 40 days to ensure that no-one was infected when they disembarked.

required, under threat of fines or arrest to stay at home (unless deemed 'essential workers') and avoid contact with others. This has meant the closure of schools, universities, places of worship, shops and other businesses (except food stores and pharmacies), restaurants, entertainment and sporting venues (*UN News* 2020; Sulcas 2020; Meredith & Choudhury 2020).

Similar to the Black Death era, though on a much larger scale, many governments have made it mandatory too for their citizens to wear face masks when out in public and required healthcare providers to wear personal protective equipment (PPE) (European Centre for Disease Prevention and Control 2020; *BusinessTech* 2020). Unlike the past, many governments today have promoted good hygiene practices, including regular handwashing with soap and water, use of alcohol-based hand sanitisers, and disinfection of surfaces (National Institute for Communicable Diseases 23 March 2020; Centres for Disease Control and Prevention, 2020). Many authorities today also have more advanced testing capabilities than the past, which has led to contact tracing in a bid to find and isolate those infected, as well as their contacts (Lacina 2020).

Unfortunately, while these preventive measures have helped to slow down the spread of COVID-19 in certain areas, like the plague era, they have not stopped its spread. Indeed, many factors have encouraged its continued spread, such as overcrowded living environments; underdeveloped or overwhelmed healthcare systems, inadequate access to PPEs, situations of poverty that have forced people to break lockdown measures to feed themselves and their families; and problematic individual behaviours, including poor hygiene and preventive practices such as handwashing and mask-wearing. In addition, ineffective political leadership has not helped matters. The USA and Brazil cases, whose presidents have denied or downplayed the seriousness of COVID-19 for many months, and whose governments were slow to roll out preventive measures, are a good example of this. Indeed, at the time of writing this article, their infection and death rates stood at the highest and second-highest, respectively, in the world (*Global Times* 2020).

Effects

With no cure and the limits of preventive measures, the Black Death spread rapidly in the past, as has COVID-19 in the last few months, which meant that

both diseases negatively affected their populations. For the medieval generation, the Black Death was a demographic catastrophe. Death usually resulted within three to seven days after infection, with a 60 to 80 per cent mortality rate amongst those infected with bubonic plague, and an almost 100 per cent fatality for those who acquired the more virulent pneumonic strain (Hays 2003: 39). Between the 1340s and 1350s, it is estimated that tens of millions of people died across northern Africa and Eurasia; on average, between 25 and 50 per cent of populations infected, though sometimes as high as two-thirds where populations were densely populated (Tignor 2008: 473-475)[7].

Although COVID-19 has, at the time of writing, not been as devastating in terms of population numbers as the Black Death, it has still had huge demographic consequences. To date, this coronavirus has infected over 17 million people across the world (*Worldometer* 2020). Healthcare systems, including some in developed countries, have been overwhelmed by many people seeking medical care (Marquez & Moghe 2020; Beall 2020). Lack of staff, hospital beds and ventilators have led to many deaths (WHO 2020g)[8]. Although COVID-19 has resulted in a lower overall fatality rate, approximately 680 000 people (as of 30 July 2020) compared to the tens of millions who died during the Black Death era, today's larger world population. The continued lack of a cure or vaccine will undoubtedly result in more

[7] Between 1347 and the early 1350s, Watts (1997: 25-26) has argued that the Islamic Mumlak Empire, with its capital in Cairo, experienced 'catastrophic loss of human life'. Bray (1996: 57) and Hays (2003: 37, 46) put estimates at 30-40 percent for Europe, with some 25,000,000 dead between 1347 and 1350. By the early 1350s China had lost up to two-thirds of its population and the Chinese population dropped from around 120 million to around 80 million over the course of a century after plague's first outbreak (Tignor 2008: 475).

[8] Although most people (80%) develop mild symptoms or are asymptomatic, 15% suffer severe symptoms requiring hospitalisation (including oxygen), and 5% suffer critical infections requiring ventilation. The people most negatively affected to date have been the elderly (particularly those over the age of 65 years); those with underlying medical conditions, such as hypertension, heart disease, diabetes, lung or respiratory problems; and those who are immunosuppressed, such as cancer, TB and HIV patients (Centres for Disease Control and Prevention 2020).

infections and fatalities as time goes on, as the repeated new 'waves' or outbreaks in different parts of the world demonstrate (Morris, Birnbaum & Weber-Steinhaus 2020; *The Economist* 2020). Doctors are also finding, as the months go on, more evidence of serious long-term consequences, such as protracted symptoms of some COVID-19 patients, as well as lung, heart and neurological health problems, which they fear might linger throughout their lives (Christenson 2020; Citroner 2020; Cormier 2020).

In addition, the Black Death had serious psychological effects on its populations. Living through the Black Death, fear of death, apprehension, and despair were constant companions. Indeed, in some of the worst-affected areas, funeral traditions were disrupted or abandoned because of the sheer volume of the dead as 'corpses lay in piles on the roads' or were hastily buried in mass graves (Bray 1996: 49-50, 69). As mentioned earlier, this abnormal situation sometimes resulted in hysterical, violent and panicked scapegoating behaviours. Others sought relief by taking a hedonistic approach, which meant over-indulging in alcohol and sex, seeking pleasure in life while they still could (Hays 2003: 51). Even artists captured the deep sense of gloom in the 'Dance of Death' artworks, which commonly highlighted death scenes or dying from the plague in their paintings and murals (McNeill 1976: 162; Bray 1996: 76). During the late 1340s, an Italian poet called Petrarch captured this era's sombre mood by the writing of 'the empty houses, abandoned towns … fields covered with the dead, [and] a vast and dreadful silence over the whole world' (Cartwright & Biddiss 2000: 40).

Similar to the Black Death, when we looked out of our windows during South Africa's strictest level 5 lockdown period, we too experienced empty streets and silence in our world[9]. For some, lockdown brought an opportunity to slow down, spend time with family they were confined with, and reflect on life goals; for others, it brought psychological distress (Springer 2020). For many, it brought a deep sense of grief for the loss of life from COVID-19 or depression because of forced separation from loved ones or loss of jobs. Moreover, with no cure available, COVID-19 has caused pessimism, fear and uncertainty. For example, it has brought tensions, and even domestic violence amongst those confined together for long periods, enhanced loneliness

[9] South Africans experienced level 5 lockdown restrictions, the highest lockdown level for this country, for 5 weeks between 27 March and 30 April 2020.

amongst those living alone, exacerbated mental illness, and anxiety for those unable to care for sick loved ones separated from them in isolation facilities (Springer 2020; Onyango 10 May 2020; Orkin *et al.* 13 May 2020). Disruptions to longstanding customary practices, such as funerals, which have been reduced in size, postponed or prevented, and religious traditions, such as attending mosques and breaking fasts with families during Ramadan, have also been deeply unsettling (Larnaud 2020; *South African Government News Agency* 2020; Yuan 2020; Chulov 2020).

Although situations have varied from place to place, both the Black Death and COVID-19 have also had severe political effects on societies. As a fourteenth-century Italian writer Boccaccio captured it: 'the authority of human and divine laws almost disappeared for, like other men, the ministers and executors of law were all dead or sick or shut up with their families, so that no duties were carried out' (Bray 1996: 49, 77). In some places, rulers were so weakened by the plague, such as those who ruled the Mongol Empire, that the Chinese, who the Mongols had conquered in the late 1270s, were able to stage a series of successful armed rebellions against their overlords, which led to the Mongols' defeat and the re-establishment of a Chinese-ruled dynasty in 1368 (Abu-Lughod 1989: 183, 342). In other places, the effects were less extreme, and authorities resumed their political functions after a few months of interruptions (Hays 2003: 44-45). Today, while governments around the world have certainly been affected by COVID-19, particularly by the temporary lockdown protocols they implemented and the infection of political leaders, unlike the plague era, few political leaders have succumbed to the virus. Thus far, no governments have been toppled due to its outbreak (*BBC News* 2020). Of course, it is early days still. With the US 2020 presidential election looming and a sitting president stirring the flames of controversy by promoting unproven treatments, and questionable handling of the crisis, COVID-19 might produce a future political upset in the November 2020 elections (Philippe 2020).

In a similar manner to the plague era, many governments today have used the outbreak of COVID-19 to impose new policies that have led to firm regulation of societies. Although implemented ostensibly in the public's best interests, regulatory measures also affected societies in both the fourteenth and twenty-first centuries negatively. To be sure, other than affecting people's psychological and social well-being, these diseases and the lockdown measures that accompanied them have also had devastating effects on people's

livelihoods. In addition to undermining the workforce through illness or death, lockdowns in both the past and present have disrupted all kinds of businesses, including food production and industries, the retail, service and transport sectors, and long-distance trade with the closing of international borders (McNeill 1976: 170; Abu-Lughod 1989: 170, 183; Nicola *et al.* 2020: 185-193). With businesses closed (some temporarily, some permanently), this too led, in the past and today, to the destabilisation of many economies through growing indebtedness, food and other shortages, rising prices and unemployment (Bray 1996: 54-55, 68-69; Hays 2003: 44, 48-49, 55, 58; Segal & Gerstel 2020). Unable to support themselves or their families, this has produced much hardship for people, as it forced many into poverty and reliance upon charity, in the form of soup kitchens or food banks (Watts 1997: 20, 25-26; Moulds 2020). Unlike the past, many governments today have accumulated huge debts in the form of loans from international lending institutions, such as the World Bank or International Monetary Fund, to bolster their failing health and social services, but also to provide stimulus packages for struggling businesses and emergency aid pay-outs to the growing number of unemployed (*The Economic Times* 2020). The long-term consequences of having to repay exorbitant debts will weigh down the economies of such governments for years to come, while the pandemic has driven the world economy into a global recession (Chowdhury & Sundaram 2020; The World Bank 2020).

Furthermore, these economic hardships have had knock-on effects on political systems. Similar to people from the past who protested their loss of income, food shortages and the infringement of their rights and social traditions under government-imposed plague restrictions, many people today have also sought to challenge their governments, which have destabilised their countries further (McNeill 1976: 152, 162; Hays 2003: 53-56; Watts 1997: 18-19). For example, people have protested against lockdown measures that have interfered with people's freedoms of movement and civil rights, and with their ability to earn a living and feed their families (Ellyatt 2020; Grootes 2020; Prasad 2020). However, while some countries' leaders, such as Prime Minister Jacinda Ardern of New Zealand seem to have learnt valuable lessons from the past about what not to do to inflame citizens' protests and found a way to provide decisive, transparent and effective handling of the COVID-19 crisis, others have not (Hamilton 2020; Luscombe 2020). Undeniably, the USA today finds itself at the very top of the COVID-19 infections and mortality list because of its ineffective leadership, which includes a 'slow initial response,

mismanagement of testing, poor coordination between the state and federal government' (Safi 2020; Wolfson 2020). This country has also not provided adequate support for all its hard-hit citizens during this crisis, and implemented heavy-handed approaches to quell protests. Indeed, the 'Black Lives Matter' campaign, which has been reignited in the USA in recent weeks, and resulted in widespread violent protests over police brutality, continued racial inequalities and socio-economic hardships suffered by black communities in the USA, is a good example of this (Pearl 2020).

While we have highlighted several uncanny similarities, and a few key differences between the Black Death and COVID-19 eras, one area that marks a major difference between the two has been in advancements made in Information and Communication Technologies (ICT). In today's world, the existence of computers and the internet, wireless and satellite technologies, and mobile smart devices, such as cellular phones have had an enormous impact on people. They have helped to keep people connected, at least virtually, during the COVID-19 pandemic, when physical contact has been restricted because of social distancing and lockdown protocols (United Nations Department of Economic and Social Affairs 2020). Certainly, these technologies have kept friends, families, work colleagues, and worshippers in touch; have kept people entertained while in lockdown; online platforms have kept the wheels of learning at schools and universities turning and enabled people needing support, such as talk therapy, to obtain such assistance. It has also enabled the development of new businesses and the expansion of already existing e-commerce ones, such as online service delivery services (*Financial Post* 2020). They have, in addition, provided important public health organisations, such as the World Health Organisation, with a global virtual stage to keep people informed about COVID-19, including critical developments taking places, such as research into cures and vaccine trials WHO 2020c). Indeed, without ICTs, thousands of scientists around the world would not have been able to communicate with one another to share knowledge so quickly about the sequencing of the COVID-19 genome, the potential for various medical treatments, concerns about the mutation of this virus, and cutting-edge research results from the hundreds of clinical vaccine trial experiments currently underway.

Of course, we need to remain circumspect in giving out unqualified praise for ICT solutions. Not everyone has access to such technologies in resource-constrained environments. This encourages digital forms of

inequality in online learning; a situation very much in evidence amongst UKZN students and many other learning institutions across South Africa, where lack of access to smart devices and data because of poverty, as well as inadequate Wi-Fi connectivity through inadequate infrastructural development, have affected the learning experiences of many students negatively (Mzileni 2020). In addition, an expanding reliance by governments on ICT for mass surveillance and tracking of their citizens during the COVID-19 pandemic threatens individual rights to privacy, should these technologies remain in place after this pandemic (Kharpal 2020). Furthermore, ICT online platforms provide great opportunities and give a voice to charlatans promoting falsehoods of all kinds, including fake news, the sale of 'miracle cures' and advice, which can cause much serious harm (Karagiannopoulos 2020; Petchot 2020).

Conclusion: The Value of Studying a Past Pandemic for Understanding Present Day Disease Challenges

Today we are in the midst of a global pandemic. In the relatively short time that COVID-19 has been with us – approximately seven months at the time of writing this article – it has had an enormous influence on our world. It will undoubtedly be the research subject of many scholars in future years, who will unpack and interrogate all aspects of this pandemic. Yet, as historians, what can we contribute?

We can contribute an important historical perspective to the scholarly discussions. Studying past pandemics, such as the Black Death, is valuable as it helps us to see that while COVID-19 is a global catastrophe unlike any in our lifetimes, it is not the world's first pandemic or only pandemic and that there are even parallels that can be drawn by analysing them comparatively (Phillips 2012). Although we live in a world that is much more advanced than the Black Death era, in terms of our scientific knowledge, healthcare systems, and technological capabilities, in other ways, fourteenth-century societies were not that different from our own. Indeed, the Black Death and COVID-19 shared similarities in terms of the wide range of people's reactions, explanations and strategies to tackle these diseases, as well as the underlying social inequalities and tensions they exposed. In addition, both diseases led to a comparable sense of fear, disorder and anxiety due to a large number of deaths, but also the frantic search for remedies and preventive measures. Viewing COVID-19 in historical

perspective also allows us to see that pandemics had a wide range of similarly powerful demographic, social, economic, psychological and political effects on their societies, that people struggled against and recovered from devastating pandemics throughout history, and that many people were able to move on from these pandemics. This comparative knowledge can be comforting, as it gives us hope in uncertain times that we too, will survive our present pandemic (MacMillan 2020).

Moreover, studying diseases in history has shown us the importance of recognising the close relationship between globalisation and diseases; and that strongly developed societal interconnections serve as a key factor in the spread of diseases. Undoubtedly, today, we live in a world that is even more connected through global commerce and international air travel, which enabled COVID-19 to spread so rapidly around the world. While we do not know yet the exact extent of the economic damage that will occur from COVID-19; to be sure, many of its effects on our connected world will only be truly known in the years to come. Historian, Janet Abu-Lughod's point that the Black Death ultimately 'set back the development of the world system for some 150 years', is a sobering reminder of the potential economic fall out for our coming months and years (Abu-Lughod 1989: 170). Furthermore, since infectious diseases are, as former UN Secretary General Kofi Annan argued, 'problems without passports' that do not respect national boundaries, tackling these problems needs collaboration at the global level as cooperation between many countries in the race to develop vaccines demonstrates (Kell 2020).

Studying diseases in a historical perspective also encourages us to recognise the historical and medical facts that COVID-19 will not be our last pandemic. Placing this disease in its broader context of diseases in world history gives us greater awareness and understanding of the threats and impacts posed to humanity by past pandemics and thus, by extension, potential future disease outbreaks. Being forewarned means being forearmed, as it can push people to realise that we cannot be complacent about such threats, as well as spur governments to prepare their societies to face future disease crises (Bower 2020). As medical historian Howard Phillips has argued in a recent interview with Julie Parle (2020: 8), studying past pandemics as a historical subject in our school and university syllabi is a vital step in keeping the threat of pandemics alive in the minds of our youth. We agree with Phillips' argument, and will continue to teach about devastating diseases in our history courses at UKZN. Forearmed with historical knowledge, it is these future leaders and

policymakers who will hopefully act decisively to prepare their societies better for coming pandemics.

However, while studying past pandemics has enabled some societies to learn important lessons, such as the preventive value of physical distancing and swift implementation of lockdown measures to limit the spread of infectious diseases, a strategy successfully implemented, for example, by New Zealand's government, it does not mean that these lessons have been learnt by all. The fact that many governments have been caught short in terms of their readiness, resources, and/or lack of political will to fight COVID-19, or that minorities, such as foreign migrants, Chinese nationals overseas, and members of the LGBTQ+ community continue to be attacked and scapegoated for this disease, highlights that being forewarned by history does not necessarily mean being forearmed. Instead, unfortunately, we see that some behaviours and attitudes have not changed at all, merely repeating themselves in different historical periods. If we are to draw lessons from the past, then we need to understand that constructive changes within societies must not only be implemented but sustained.

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Negotiating the Possibilities Digital Humanities Offers Media and Cultural Studies for Crisis Curriculum Adjustments in the Time of COVID-19

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Abstract

In this chapter, we reflect on opportunities and limitations in Media and Cultural Studies, emerging as a result of the COVID-19 lockdown. Media and Cultural Studies (MECS) curriculum in South Africa traditionally focused on critical or vocational discourses, or in some rare cases a mix between the two (Tomaselli & Caldwell 2002; Jordaan 2004; Tomaselli 2012; Boshoff & Garman 2016). Vocational training, however, depends on contact, as students do not have access to specialised equipment outside the university space. In such extraordinary times as the COVID-19 lockdown, theoretical portions of MECS curriculum may be repurposed to migrate to online platforms like *Moodle*, with additional support from WhatsApp messaging, Loom and Zoom. Media educators are confronted with the question of how to replace contact vocational education, in this case Video Production, meaningfully (MECS709).

The chapter considers Digital Humanities (DH) as a possible gateway to advancing vocational education without compromising critical thinking. Digital humanities refer to the branch of scholarship using literary and linguistic computing, informatics (Nyhan, Terras & Vanhoutte 2013: 2), making 'creative use of digital technology to advance humanities research and teaching' (Gold 2012: ix). Tools for collaborative writing, data visualisation and text mining will be elaborated as the means of developing digital literacy. Digital literacy is understood in relation to national articulations (NEMISA,

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National e-Skills Summit and Research Colloquium 2018), where one can use technology to one's own benefit in order to engage actively and productively in the world, a 4IR world, which some argue is already upon us (Hamid 2018).

Using digital storytelling (DST), students will also be asked to respond to content using digital platforms. Benmayor argues that digital storytelling ought to be a signature pedagogy for the Humanities as through this pedagogy, 'the invisible becomes visible, creating a space for empathic listening, learning and understanding' (2012: 524). Scholars focusing on narratives (Bourdieu 2000; Ellis 2004; Mitchell *et al.* 2005; Lather 2017) demonstrate the power these stories have to reveal structuration of class, race, gender and sexual orientation. Digital humanities scholars have attempted to create digital histories where students and the general public are invited to contribute to digital archiving (Arthur 2008; 2015). In our context, the focus on digital storytelling could serve as an important intervention addressing the historical invisibility of most communities. This is one way of getting students to become confident with technology to become digital producers in their own right.

Arthur argues that digital humanities, through the field of digital history, enlivens by enjoining the plurality of the living to participate in refashioning history (ibid). The second wave of Digital humanities is said to be 'qualitative, interpretative, experiential, emotive, generative' (Presner et al; 2009), the qualities which hold the promise of realising digital literacy and educational values.

Keywords: Digital humanities, decoloniality, digital literacy and e-skilling, digital storytelling, stereotyping.

Introduction: History and Context

Media Studies colloquially refers to a range of fields related to media and communication, which may be theoretical and vocational. Media Studies, cultural studies and communication studies proliferate into an array of sub-fields, which may be considered theoretical strands of the discipline, while branches of film studies and journalism could also encompass vocational training (Tomaselli & Caldwell 2002; Jordaan 2004). Students routinely lobby for more vocational training, as this is perceived as a direct route to the marketplace (Boshoff & Garman 2016). However not all institutions offer vocational training in this discipline as it is expensive to roll out and maintain.

In order to address vocational training, the Media and Cultural Studies department developed a partnership with a service arm of the university, University Technology Enhanced Learning (UTEL)[1] in order to teach a Video Production component in 2018. Alongside this, an additional 'value add' of digital literacy was offered by Ms Franziska Pannach, an Information Technology Masters intern from the University of Göttingen. Pannach held a ten-week introductory course on Digital Humanities covering definitions of the field and tools such as collaborative working, digitalisation of analogue texts, text mining, data visualisation, and digital curation, and she introduced students to programming basics.

Boschoff and Garman (2016) note the tensions of maintaining social-justice type critical courses in the suite of Media Studies modules (journalism inflection) where students generally favour glamorous media work. In this case, students did respond very positively to the Video Production component. However, one student noted:

> The richness of this semester has been amplified by 2 extremely essential and informative programs that the university needs to recognize that is; the Video Production classes as well the Digital Humanities. As a media student who has experienced both these classes, I say there is a huge NEED for both these modules to be acknowledged as credit modules that stem throughout the semester or even a year. The amount of knowledge one has acquired from both is incredibly important and really would give UKZN students a competitive edge (Sewchurran 2018, Report on Video Production module).

The COVID-19 Crisis

Of the two strands, the more popular Video Production module was developed, emerging as a full module in 2020. However, the module depends on access to the Westville studios, which houses editing suites, film studios, and a range of professional cameras. Students under COVID-19 lockdown conditions do not have access to such sophisticated equipment and therefore it may not be

[1] UTEL refers to University Technology Enhanced Learning. UTEL is equipped with studios, cameras, editing suites and technical staff.

possible to run this module until we return to normal conditions of teaching. Should normal conditions not prevail in 2020, the key concern is substituting vocational training components of modules such as Video Production. While it may be possible to return to theoretical content delivery alone, we argue for revisiting digital literacy as a possible means of advancing vocational training and meeting some higher education objectives hitherto underemphasised.

Underemphasised Higher Education Values

Higher education values reflected here taken from the global, national, institutional and disciplinary contexts, are arguably under-emphasised in the routine delivery of curriculum. The Global University network for innovation report 7 (Vilalta, GUNi, 2019)[2] in the main focuses on how synergies between science and technology and humanities may be advanced through fostering interdisciplinary cooperation. At the national level, sustainability goals include delivery of quality education with a key focus on e-skilling (for 4IR) and peace-justice, which relates to social cohesion.[3] At an institutional level, Teaching and Learning policy principle 7 indicates, 'Teaching and learning must optimise student employability and encourage responsible citizenship by developing key appropriate graduate attributes' (UKZN, Teaching and Learning Policy, 2017 – Revised). The policy does include the idea of responsible citizenship; however, expanding notions of appropriate graduate attributes are not explored. Bozalek and Watters (2014: 1070) offer a useful construction of attributes, with an emphasis on authentic teaching environments, which 'should allow graduates to learn for an unknown future'. Additionally, learning must also be of unknown and lesser-known contexts (past and present). Decolonisation as a theoretical lens has gained prominence especially because of inclusion in the *#feesmustfall* agenda. Maldonado-Torres refers to the movement in his outline of ten theses on coloniality and decoloniality, and articulates why different modes of knowledge production are crucial to decoloniality.

> Decoloniality involves a decolonial epistemic turn whereby the damné emerges as a questioner, thinker, theorist, writer, and communicator

[2] GUNi was created by UNESCO in 1999.
[3] NRF articulation of national strategic plan and goals.

> … When the damné communicates the critical questions that are grounded on the lived experience of the open body we have the emergence of an-other speech and an-other way of thinking ... Writing is a form of reconstituting oneself and a way of countering the effects of ontological separation and metaphysical catastrophe ... The damné has to break from the solitude of its prison to be able to reach out to an Other. Speaking, writing, and the generation of questions are part of the drama of a subject that starts to regain its humanity in reaching out, without masks, to others. This is a condition of possibility for the emergence of non-decadent speaking, writing, and theorizing ... This is the basis of an-other kind of knowledge and of another archive. (Maldonado-Torres 2016: 25).

In addition, Grosfoguel (2013: 89) argues for epistemic diversity, which could produce pluriversal conceptual fields. From a disciplinary perspective, Media Studies and its dizzying array of sub-fields have a tendency to insulate content, resulting in silo-type knowledge bases for graduates who then have difficulty during post-graduation crossing disciplinary boundaries in order to advance their research ideas, which may suggest that disciplinary contexts are in danger of myopia even when disciplinary mastery is the key focus. This chapter is an attempt at envisioning a crisis-curriculum for Media Studies in the hope of reflecting the matrix of values summarised in the graphic below.

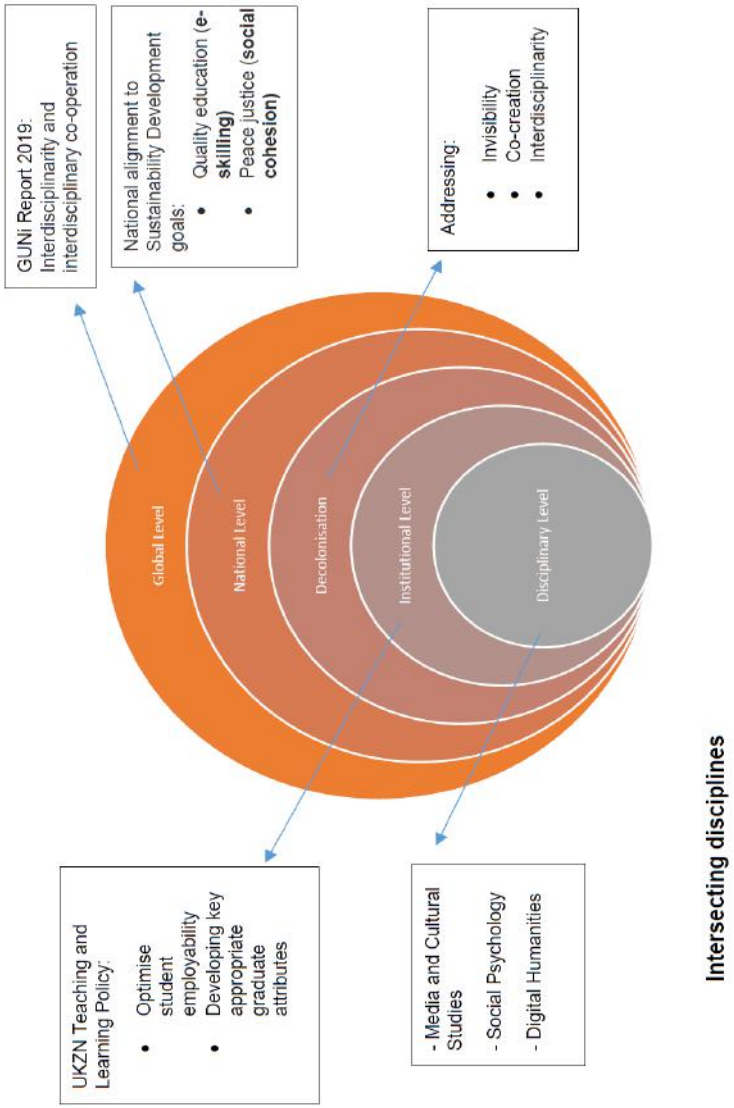
Intersecting Disciplines

In the proposed set of tasks, the intersecting disciplines or fields involved are Media and Cultural Studies, Social Psychology and Digital Humanities. Media and Cultural Studies involves the analysis of communication processes. The most basic communication model refers to Shannon and Weaver's 1948 conception (Baecker 2013):

Sender ⟶ Message ⟶ Receiver

This model grew in sophistication and the discipline of Media and Cultural Studies emerged as the study of institutions, audiences and texts (production and representation). The intersection of MECS and Psychology occurs with the concept of *stereotypes*. Stereotypes are relevant to MECS in relation to

representation, the study of which deepens in Film Studies, but is also relevant in the context of Journalism. In terms of Psychology, the concept of *stereotype* belongs in Social Psychology.



Although first used in the 1800's in a printing context, Lippmann is credited with the coinage of the term 'stereotype' in 1922, which simply referred to a picture of something on someone conjured in the mind. Katz and Braly (1935) and Kruglanski and Ajzen (1983) later applied the idea to ethnic stereotypes, concluding that these are uniformly negative. Allport, Clark and Pettigrew (1954) then critiqued the over-simplification of the concept and post-World War II, Tajfel (2000), a key contributor, introduced the idea of stereotyping as a means of justifying domination over groups of people. During the 1980s and 1990s, Fiske and Taylor (1991), and Stangor and Duan (1991) again critiqued the over-generalisation of the use of stereotyping as an analytical category. This era also saw the medicalised studies of stereotyping in relation to cognitive structures and pathways within the brain (neuroanatomy of social cognition, Quadflieg *et al.* (2009). Fiske and Neuberg (1990), McGarty *et al.* (1992), and Jost and Banaji (1994) shifted the focus from representation to self-categorisation and individuation. In fairly recent literature, Govorun and Payne (2006) looked at conditions producing stereotyping. Nelson (2009) may represent the most comprehensive reader on the concept in which Stangor (2009) indicates that in spite of the breadth of research, the easy questions around the concept were given prominence by researchers, but the hard questions were neglected. Nelson further explains the lacuna in the field:

> Perhaps the most important contributions that social psychologists have made involve the potential for improving intergroup relations. This is an important, but also very difficult topic, and one that has been cracked in large part on the theoretical and not the applied level. We have developed excellent models to work from, but know little about how to implement programs that will make a real difference (Nelson 2009: 10-11).

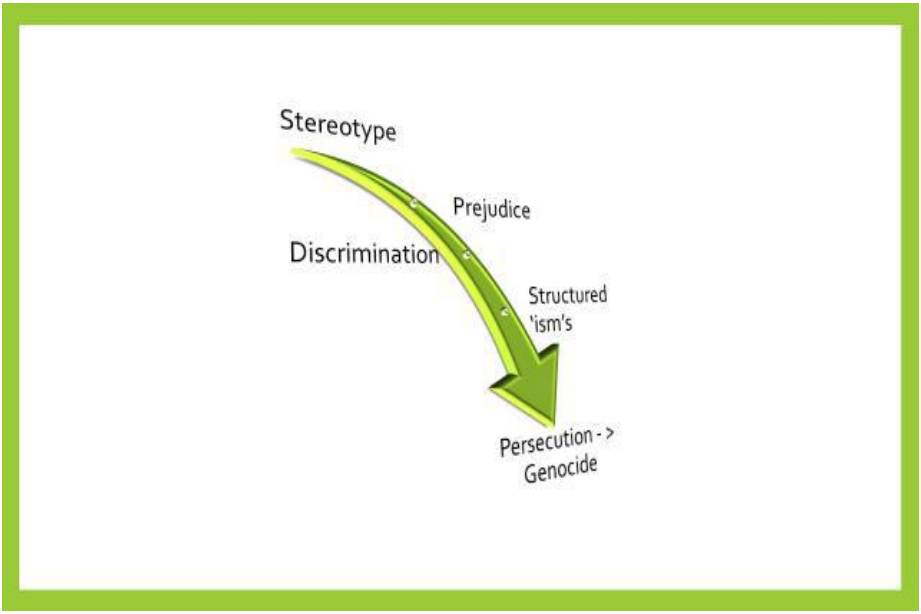
Defining Stereotypes

Some scholars argue that stereotyping is a natural process of making life easier (Hamilton & Trolier 1986; Taylor 1981; 1984). This is where 'categorisation, assimilation and the search for coherence' are functional cognitive processes (Tajfel 2000), which enable us to reduce cognitive load, namely the amount of

information we need to process in a given situation (Hamilton & Trolier 1986). Taylor (1981) went so far as referring to 'the cognitive miser' as a person with 'limited information processing capacity'. In contrast, Asch (1990) explains stereotypes as a psychological error in terms of individual and group identities, in that if one accepted individual identity, one could not ascribe 'identity' features to a group.

Given advancements in global human rights and legal reform, the question of studying stereotypes ought to be redundant. Unfortunately stereotyping remains relevant, as scholars who are more current indicate that stereotypes are the first curve of a dangerous downward spiral, which could eventually lead to persecution (Nelson 2009).

Lee revisits Tajfel's early ideas on the link between ideology and stereotyping. Lee states that, 'to a large extent, the primary cause of the ethnic and racial problems is economic or socio- political/structural' (Lee 2011: 43). Although Stangor's (2009) critique that the hard questions around stereotyping were neglected, some significant work was done in relation to how stereotypes were activated and what factors induced quick activations of stereotypes. Interestingly, most of these factors are external or structural.



It has been established that stereotypes are a means of reducing cognitive load (Allport *et al.* 1954; Fiske & Taylor 1991; Forgas, Tajfel & Forgas 1981; Van Knippenberg et al 1994). However, there are certain conditions under which an individual more readily reverts to categorising. This is when one is fatigued, distracted or ego-depleted (Govorun & Payne 2006; Bodenhausen, Macrae & Garst 1998; Kruglanski & Ajzen 1983). It could also occur more easily when one is unmotivated (Fiske & Neuberg 1990).

Stangor and Duan (1991) indicate that stereotypes will be activated quickly during tougher economic or psychological conditions. Stereotypes tend to be activated when one encounters people one is not familiar with, and whom one does not care to get to know any better (Nelson 2009: 10-11). Finally, stereotypes can be activated if they are socially sanctioned.

Understanding technology becomes extremely important, as so much of our time is claimed by cyberspace. Davenport and Beck (2001) refer to this age as 'the attention economy', where every industry is constantly trying to capture our attention. In this drive to capture eyeballs, industry creates cognitive load through 'aggressive push marketing strategies' online.

Media scholars have studied digital echo chambers. Perhaps one of the reasons these emerge, is as a result of the effects of the attention economy and users seeking to manage cognitive load. It is troubling that suicide among youngsters in KwaZulu-Natal (South Africa) has increased post the digital access (Naidoo & Schlebusch 2014). One of the key ideas motivating this chapter is the possibility of the digital space contributing to the structural conditions that create rapid activation of stereotypes because of cognitive over-load generated by everyday online activity.

It is therefore important to conceptualise other ways of using online tools, especially when the only pathway to students during COVID-19 is via digital networks. There is a range of digital humanities tools, which could be mobilised to articulate the matrix of values defined earlier. This chapter will focus on text mining, data visualisation and collaborative writing.

Defining Digital Humanities

Nyhan *et al.* defines digital humanities as the branch of scholarship using literary and linguistic computing, informatics (2013: 2), making 'creative use of digital technology to advance humanities research and teaching' (Gold 2012: ix). New technological tools allow humanities scholars the possibility to

pose new questions of increasing complexity, and to question the very technology itself (Mahony *et al.* 2014). Schnapp and Presner (in Burdick *et al.* 2012) even refer to the second wave of digital humanities, which is 'qualitative, interpretative, experiential, emotive, generative'. The interpretative and generative aspect of the second wave of digital humanities could prove useful to realising the higher education values of visibility, co-creation and interdisciplinarity; however, could this exist for students as it does for scholars? Arthur (2008: 38-39) argues that digital humanities, through the field of digital history, enlivens by enjoining the plurality of the living to participate in refashioning history. Arthur raises an important possibility for decoloniality filtering through one's digital curriculum.

The *#rhodesmustfall* and subsequent *#feesmustfall* movements illuminated the need for higher education to respond more directly to society in terms of access, transformation, and decolonisation (Abdullah 2017). Thus, knowledge production emerged as potential site for interrogation especially in the African context of digital humanities (Smit & Chetty 2014). Students remain a shifting constituency and therefore it is more difficult to access knowledge production at the level of journal articles. However, a possible point of entry may be life writing, history and the archive. Orwell recognised the archive as key to contesting ideas:

> The Party said that Oceania had never been in alliance with Eurasia. He, Winston Smith, knew that Oceania had been in alliance with Eurasia as short a time as four years ago. But where did that knowledge exist? Only in his own consciousness, which in any case must soon be annihilated. And if all other accepted the lie which the Party imposed – if all records told the same tale – then the lie passed into history and became truth. 'Who controls the past', ran the Party slogan, 'controls the future: who controls the present controls the past' (Orwell 1984).

Refashioning archives is an important point of resistance, a way for the 'damné to break from solitude' … 'to be able to reach out to an Other. Speaking, writing, and the generation of questions are part of the drama of a subject that starts to regain its humanity …' (Maldonado-Torres 2016: 25). Benmayor argues for digital story telling (DST) as a means of achieving a visibility and intimacy that would break the '*damné*'s solitude' (2012: 524). She advocates DST as a 'signature pedagogy' for the Human Sciences, as 'the invisible

becomes visible, creating a space for empathic listening, learning and understanding' (2012: 524). The use of DST as a digital humanities tool is an attempt at decoloniality, so that students may have the opportunity of becoming co-creators and peer reviewers of knowledge and knowledge pathways, as opposed to recipients of it. Alvarez highlights the tremendous potential of this kind of production,

> It focuses in particular on the challenges and opportunities that arise from aiming at encouraging students to become producers of digital objects by engaging with digital resources. The idea of the 'student' has been highlighted by Mike Neary based on Walter Benjamin's concept of the author as producer. Neary argues that we need to reinvent the relationship between teacher and student, so that the student is not simply consuming knowledge that is transmitted to them but becomes actively engaged in the production of knowledge with academic content value. Neary's proposal is that we should facilitate research or research like experiences on our undergraduates in order to transform them in productive collaborators (Alvarez 2013: 2).

Digital Humanities Tools

UNISA, the largest open-distance, higher education institution in South Africa, has been a front-runner in online pedagogies due to the nature of its open-distance offerings (Chetty 2013; Chetty 2014). UKZN has always made an array of digital tools and training available (pre-COVID-19). It is important to note these tools, as some are useful in initiating and curating interpretative and generative educational experiences. In the longer term, different platforms may be developed, and built to fit the purpose. In the normal suite of digital tools available, *Moodle* is a good learning platform, which allows for executing some of the exercises described in the next section. In addition, *Loom, Zoom, Hoot, UTEL, Audio PowerPoint, Handbrake, MS Teams,* and *Kaltura* are all available with training. Blewett is a prominent local scholar who focuses on digital pedagogies. He makes the powerful point that online tools cannot remain as simple repositories of content. Digital pedagogies involve 'curation, conversation, correction, creation and chaos' (Blewett 2014; 2016). Few will teach the same way post COVID-19. As most will be using digital platforms of some kind or the other, it may be useful to apply a digital humanities lens,

if only to interrogate the technological pathway that delivers curriculum.

Apart from UKZN, the Digital Humanities Association of Southern Africa (DHASA) and the Association of Digital Humanities (ADHO – world body) curate digital humanities tools, literature, resources, opportunities to collaborate, etc. The suite of resources are extensive and a small sample of DH type of tools are: collaborative working tools (*Etherpad, Gobby, ShareLatex, GitHub*), data visualisation tools, text mining tools (*Voyant, Catma*), digitalisation of analogue texts (*Google Ngram*), digital curation (*europeana, dp.la,* UCT dance collection, *SAMAP, CALS*, Campbell Collection, Stellenbosch – history of unchartered peoples) and programming (codecademy.com).

For this curriculum, we use *Moodle* (learning platform), *Etherpad* (collaborative working tool) and *Voyant* (text mining tool). *Moodle* will be used as a repository for all content (academic resources: texts, video lectures and audio PowerPoints). It will also be used for submission of portfolios, peer review and video feedback. All interaction on *Moodle* can be remote, and need not be live.

Etherpad will be used as a tool for peer review, co-creation, and discussion. The key reason for choosing *Etherpad* and not Google Docs is the issue of privacy and third-party ownership of personal data. Digital Humanities advances collaborative, open-source software, even if not all are free. *Etherpad* is free and there are no third-party implications.

Voyant will be used as a tool to analyse, compare and mine texts. The key reason for choosing *Voyant* is that it is the easier entry point when it comes to text mining software. There is no issue of privacy and third-party ownership of personal data and *Voyant* is free.

Operationalising the Tools

This set of exercises assumes conditions of adequate data for students. It is meant to be a fifty percent replacement of a dominantly vocational module (Video Production – MECS 709) in the event of COVID-19 extending into the latter part of 2020. The remaining fifty percent will be dedicated to a traditional research assignment. The breakdown of marks for these sets of exercises is less important; however, the activities as a whole are significant for the learning outcomes. Students will submit two digital portfolios; each includes a screen grab of a *Voyant* word cloud; a one-page text analysis; a table of characters

related to Proppian actions; a timeline graphic; evidence of discussion on *Etherpad* or *Moodle*, a digital story and peer review. The repetition of these sets of exercises starts from simple to more complex texts, enabling students to become comfortable with the software without being too pressured, in the first instance, with complex terminology.

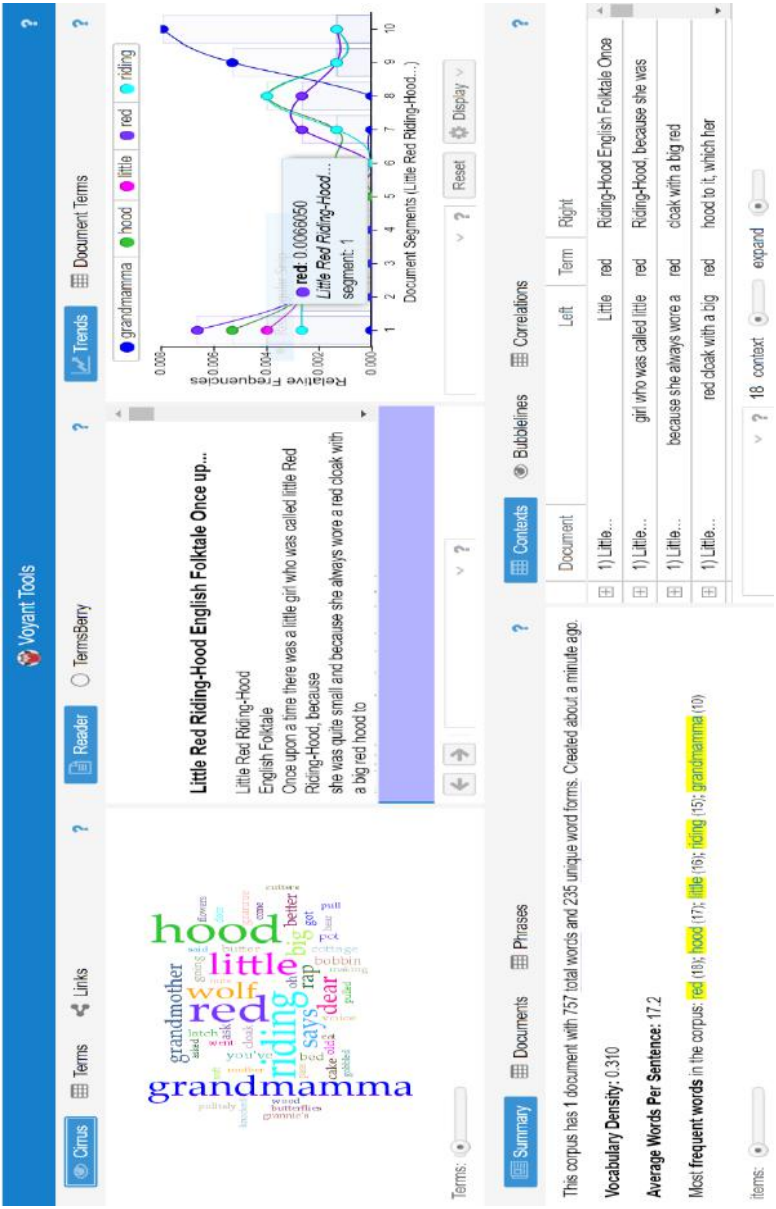
Assignment 1: Key Texts: '3 three little pigs'

In this assignment, three versions of the fairy tale, 'The three little pigs' will be circulated. The class will be divided into three groups. Each group will be given a different version. The first story is the traditional version most students would be familiar with (Steel 1922). The second story is a similar sequence of events from the perspective of the wolf who believes he is a victim of injustice and a sensationalist media (Scieszka & Smith n.d.). The third story introduces a range of extra characters, with a completely different outcome (Trivizas n.d.). The three groups of students will have to complete the following exercises based on the text they have been given. Some of the exercises are individual pieces of work and others are collaborative:

- *Voyant* word cloud: INDIVIDUAL WORK
- Text analysis: INDIVIDUAL WORK
- Table of characters and actions: SUB-GROUPS – COLLABORATIVE WORK
- Generate a timeline of events (research exercise): COLLABORATIVE WORK
- *Etherpad* discussion OR *Moodle* discussion (peer review): GROUPWORK
- Retelling the story: INDIVIDUAL WORK
- Peer review: INDIVIDUAL WORK

The Word Cloud and Text Analysis

When one inputs a corpus in *Voyant*, it generates a word cloud (above) and certain correlations and contexts, such as where the most-used words in the text appear in the document. *Voyant* shows vocabulary density, average words per sentence and the most frequent words in the corpus. It can also show the words appearing most in proximity with one another.


Voyant Tools
Cirrus
Terms
Links
Reader
TermsBerry
Trends
Document Terms
grandmamma
hood
little
red
riding
Little Red Riding-Hood English Folktale Once up...
Little Red Riding-Hood
English Folktale
Once upon a time there was a little girl who was called little Red
Riding-Hood, because
she was quite small and because she always wore a red cloak with
a big red hood to
red 0.0066050
Little Red Riding-Hood...
segment: 1
Relative Frequencies
Document Segments (Little Red Riding-Hood...)
Terms:
Reset
Display
Summary
Documents
Phrases
Contexts
Bubblelines
Correlations
This corpus has 1 document with 757 total words and 235 unique word forms. Created about a minute ago.
Vocabulary Density: 0.310
Average Words Per Sentence: 17.2
Most frequent words in the corpus: red (18); hood (17); little (15); riding (15); grandmamma (10)
Document
Left
Term
Right
1) Little...
Little
red
Riding-Hood English Folktale Once
1) Little...
girl who was called little
red
Riding-Hood, because she was
1) Little...
because she always wore a
red
cloak with a big red
1) Little...
red cloak with a big
red
hood to it, which her
Items:
18
context
expand

The key outcomes in this part of the exercise are develop e-Learning skills, i.e., to learn a new type of platform that is not social media, which is free and hopefully fun to use. It employs visual and analytical points. Students will be encouraged to play around with *Voyant* and see what emerges. This exercise is a first step to get students to understand how to compute words and assign meaning. The aim is also to stimulate data visualisation. This submission will be marked and feedback will be given to students after the *Etherpad* discussion.

The Table of Characters, Action and the Timeline of Events

The next three pieces of 'sub-group' collaborative work will involve the groups working together to create a table of action, a table of characters and a timeline of events. Depending on the size of class, this could be three or six groups. The key aim here is to stimulate dialogic communication where mutuality and propinquity develop (Wirtz & Zimbres 2018: 5). Students have to read their assigned story and discuss via online communication channels of their choice. They have to agree on the narrative structure of the story as per Todorov and Propp (Haspelmath & Sims 2013). Disagreement must be noted in the reflection cell. The group must only complete the narrative structure related to their story – 1 (which will be numbered). The other two structures (stories 2 and 3) must be left blank.

Todorov & Propp's Narrative Structure					
	Equi-librium	Distur-bance of equil-ibrium	Recogni-tion of the distur-bance	Attempt at repair	New Equi-librium
Story 1					
Story 2					
Story 3					
Reflection					

The Table of Characters

Students must follow the same procedure for filling in the table of characters or archetypes. Students have to read their assigned story and discuss via online

communication channels of their choice. They have to agree on the list of characters featured in the story. Disagreement must be noted in the reflection cell. The group must only complete the narrative structure related to their story – 1 (which will be numbered). The other two structures (stories 2 and 3) must be left blank. Students may refer to the list below to see if any characters in their allocated story match those listed here.

Todorov and Propp also defined what they called universal characters from their analysis of Russian folktales (Haspelmath & Sims 2013). Jung (2014) added to this list, which together is as follows: Mother, Child, Trickster, Judge, Mystic, Artist, King, Clown, Mediator, Soldier, Teacher, Hero, Heroine, Beggar, Seductress, and Servant Hero, Villain, Heroine, Father, Helper, Donor, Mentor.

Archetypes				
Characters	Story 1	Story 2	Story 3	Reflection

Timeline of Events

In this exercise, students in their groups will be asked to collaborate in finding free open-source software that will enable them to create a timeline showing the three to five key events in the story. The aim of this exercise is to get students experiment with search terms in order to get to the right software. Students have to collaborate to agree on the key elements and then collaborate to populate it. A basic example of a timeline will serve as an illustration; however, students will be encouraged to be creative with their submissions.

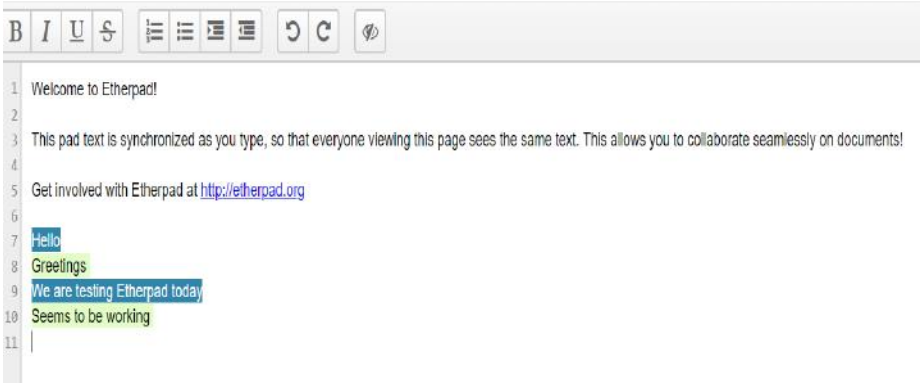
Example of a basic timeline (showing literature related to Stereotyping)

Group submissions will be marked and feedback will be given after the *Etherpad* discussion.

Etherpad Discussion

The *Etherpad* discussion involves the entire class and is preferable over *Moodle* discussion, as *Etherpad* is more easily available as a live collaborative tool. The group submissions of the Action, Archetypes and Timelines will be uploaded to *Moodle* for students to review, prior to the *Etherpad* session. In this session, the lecturer pays a facilitation role, allowing the discussion to flow. A few stimulating questions may be posed if discussion is slow. One such question is to ask which of the three stories is the authentic one. *Etherpad* is favoured over other collaborative tools, as it is very sparse in appearance with few tools. One is able to see live updates to texts and is a means of focusing on the centrality of the text (in this case discussion). After the discussion, students will have access to a copy of the text on *Moodle*.

The following is an example of what *Etherpad* looks like:



Refashioning the Story and Peer Review

The final part of the assignment is to retell the story from one's own perspective, given exposure to two other versions and a multitude of viewpoints from class members. Students are also to read the academic texts on stereotyping and representation before filming their digital story of no more than four minutes. Scholars using participatory visual methodology always insist that the focus is never on technical competence, but the capacity to explore the complexity, partial truths and multiple subjectivities (Lather 2007;

Mitchell *et al.* 2005; De Lange 2008; Mitchell, De Lange & Moletsane 2016; Ngidi & Moletsane 2019). Students will be encouraged to rename and recast characters in the story while considering:

- The visibility and invisibility of characters (concealing, excluding, naturalizing)
- Who had the dominant voice? (universalising)
- Who was a minor voice? (obscuring)
- What was the equilibrium?
- What was the cause of disturbance of equilibrium?
- What resulted in the new equilibrium?
- What were the effects of the new equilibrium?

Students' submissions will be peer reviewed by one another and the lecturer will assign the final mark. It is envisaged that this set of exercises would expose students to the field of digital humanities through these tools. It is anticipated that students will be able to use the digital tools in addition to narrative structure and archetypes to decode stereotypes embedded in mainstream media. It is also envisaged that students will be more receptive to a multiplicity of viewpoints.

Assignment 2: Key Text: 'The Stanford Prison Experiment'

In this assignment, the entire class watches one text: *The Stanford Prison Experiment* (Zimbardo 2016). This film will be uploaded to *drop box*, or made available via *Moodle*, should the size allow for it. This text is a cinematic interpretation of the events occurring during Professor Zimbardo's social psychology experiment in 1971. Here Zimbardo secured the participation of unknowing volunteers, who were then 'mock arrested' from their homes. Zimbardo simulated a prison at the Stanford University and then randomly assigned roles of prisoners or guards to participants. The experiment was to last fourteen days. It was terminated by the sixth day as the guards were showing signs of heightened aggression and brutality (even though they were not real guards) and the prisoners were showing signs of extreme stress and anxiety (even though they were not real prisoners). It is claimed that *Endemol's Big Brother* franchise emanated from Zimbardo's experiment and Orwell's 1984.

The groups from Assignment 1 will remain the same for Assignment 2. The three groups of students will have to complete the following exercises based on the text everybody watched. Some of the exercises are individual pieces of work and others are collaborative:

- Students have to watch the film: INDIVIDUAL
- Collate 10 references related to the film or Zimbardo's experiment: INDIVIDUAL
- Generate *Voyant* word cloud: INDIVIDUAL WORK
- Do a text analysis: INDIVIDUAL WORK
- Generate table of characters and actions: COLLABORATIVE WORK
- Generate a timeline of events (research exercise): COLLABORATIVE WORK
- Etherpad discussion OR *Moodle* discussion (peer review): GROUPWORK
- Telling your story: INDIVIDUAL WORK
- Individual discussion with lecturer and written review

Students will go through the same procedures as the previous assignment. The final part of the assignment is to tell one's own story, given exposure to the film and multiple ideas around this influential experiment. Students will read the academic texts on stereotyping and representation before filming their digital story of no more than four minutes. In this iteration, the only difference is the evaluation of DST. Here students will not peer review one another's work, due to the possibility of sensitive issues being raised. The lecturer will engage with individual students using *Etherpad* as interactive and dialogic feedback, and thereafter a summary of written feedback will be given to individual students.

Concluding remarks

'In order not to be myopic, it is essential to conceptualise stereotypes within social and cultural contexts' (Todd quoted in Nelson 2009: 4). In the context of this set of exercises, feedback will attempt to veer away from myopia by relating student experience to the larger political and economic structures. In addition, students will be asked to reflect on their own experiences of stereotyping. They will be encouraged to commit to cognitive labour, by trying

to avoid stereotyping people they do not know or do not care about. It is envisaged that this part of the practical experience would stimulate thinking around belonging, inclusion, and shared values.

Decolonial scholars would argue that conceptualising stereotypes must be in relation to political economy and questions of humanity (dehumanisation and subsequent invisibility). Digital Humanities scholars would argue that stereotypes must be understood in the context of digital production of the subject (and the bias inherent in technology). It is for these reasons that exploring stereotypes in a teaching and learning context necessitates the use of digital story telling of some form or the other.

This is so as to experiment with visibility, multiple subjectivities, relational communication that in turn could encourage participation and reduce social barriers, and finally get students comfortable with digital literacy.

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Resilient Transformation of Studio-based Teaching and Learning in Creative and Design Disciplines towards Cognitive Apprenticeship

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Abstract

New challenges present new opportunities for curriculum innovation and transformation. The immediate health crisis in South Africa necessitates a swift but resilient response by Higher Education Institutions to save the 2020 academic year, with many institutions shifting their mode of teaching from face-to-face to online. Creative and design studio-based modules might face more challenges with this shift in the mode of delivery. These modules still rely heavily on teaching project-based modules through the master-apprentice model in studio environments. However, such a transformation to a virtual learning environment requires the 'master' to recognise the role of theory and evidence-based design activity to transform learning in these disciplines. The cognitive apprenticeship model has many similarities to the master-apprentice model, but it promotes the necessary power shift from the 'master' to the student. Such a pedagogical shift requires a collaborative, responsive, resilient and creative approach with deep empathy for both the student and 'master' to ensure the upholding of the integrity of the curriculum as well as the future employability of students graduating at the end of the academic year. This chapter reflects in and on the action of the curriculum transformation response implemented in studio-based modules at a local Higher Education Institution in South Africa. The global health crisis started the conversation of a pedagogical shift in studio-based modules, but it forced South African design educators to have a hard look at the way design has been taught in South Africa.

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Introduction

New challenges present new opportunities for curriculum innovation and transformation. The creative and design disciplines still rely heavily on teaching project-based modules through the master-apprentice model in studio environments. This model focuses on the craftsmanship of designers to create aesthetically pleasing objects/outcomes which often results in spending too little time on developing 21st-century skills (Norman 2016: 343). The discipline of design evolved from its craft-based origins (*cf.* Buchanan 2001: 5) into a powerful way of thinking and solving 21st-century problems such as sustainability and the improvement of people's lives (Dorst 2019: 118; Norman 2016: 343). However, the education of designers in project-based modules in South Africa, and even Africa, somewhat trailed in adjusting to these new requirements since the 'masters' often cannot articulate, or may lack the guiding principled knowledge that informs their actions to their students (Frascara 2007: 61, 67; Norman 2016: 343). Design education has evolved over time to address the needs of industry and society, but it needs continuous change to keep up with the ever-changing and challenging world (Noël 2020: 6). Researchers such as Don Norman, Ken Friedman, and Jorge Frascara are avid critics of design education (Noël 2020: 6), but often the action required to make the necessary transformation is slow, such as in most studio-based modules in design education in South Africa. The immediate health crisis in our country necessitates a swift response and challenge these conventions to shift the pedagogical approach in these disciplines to a more suitable teaching and learning approach for a virtual learning environment.

This chapter reflects on the thinking (in and on action) of the curriculum transformation of project-based learning in studio environments in creative and design disciplines from face-to-face to online learning to avoid a standstill of the education system at a specific private Higher Education Institution in South Africa. However, not all Higher Education Institutions in South Africa agree that it is possible to teach studio-based curricula online, due to the inherent limitations of the teaching approach as with other disciplines which is patient- or laboratory-based (*cf.* University of Witwatersrand 2020: online). The chapter starts by interrogating the nature of the master-apprentice

model and other traditions in the education of creative and design disciplines. The theoretical framework that frames this study is the cognitive apprenticeship model as guiding learning theory, project-based learning and social constructivism. This chapter reflects on a new way of thinking about studio-based modules in creative and design disciplines by pushing the boundaries for project-based learning in a virtual environment within the minimal timeframe. The lessons learned during this time will most likely change the way that studio-based curricula can be taught in future as well as how the knowledge gained through this reflective practice can be extended beyond the creative and design disciplines to other disciplines in the Humanities and beyond.

The Theoretical Underpinning for a Pedagogical Shift in Creative and Design Education

Most design courses, except for architecture, were originally presented as part of the Fine Arts at traditional universities (Buchanan 2001: 5), with South Africa being no exception. Lange and Van Eeden (2016: 67) point out that in the eighties, design courses at universities mostly excluded students of colour as a result of segregation policies. During this time, vocationally orientated design diplomas were presented at South African Technikons. The programme design of such qualifications dictated to students to master the techniques and skills of a vocational occupation (e.g. graphic design) (Council of Higher Education 2004: 8), which resulted in the training of designers rather than the educating of lifelong learners (Frascara 2007: 67). This approach to design education rippled through the education system, with many young 'masters' appearing on the scene in the post-apartheid years in the restructured Higher Education system in South Africa. However, design is not merely about creating aesthetically pleasing objects (Norman 2016: 343), but is rather the 'human power of conceiving, planning, and making products that serve human beings in the accomplishment of their individual and collective purposes' (Buchanan 2001: 9). Design programmes need to evolve so that they can equip current students with 21st-century skills, including creative problem-solving abilities for a changing industry entering the fourth industrial revolution, where many crafting skills would be replaced by artificial intelligence (Van Zyl 2019: 3; Verganti, Vendraminelli & Marco 2020: online). In the past, the design product or outcome overshadowed the process in design education;

however, the literature reports a shift in importance to the design process and sense-making (Alexander 2008: 10; Cassim 2013: 192; Verganti *et al.* 2020). Dorst (2019: 122) suggests that designers need to shift their thinking beyond the problem-solving paradigm to a new paradigm of complexity theory and systems thinking when they are faced with truly complex problems, such as the current global health pandemic.

The local creative and design disciplines still rely heavily on teaching studio-based modules through the master-apprentice model. This model originated in the years preceding widespread access to higher education in various sectors including trade and craft, with many masters only teaching apprentices how to become blacksmiths, painters, and sculptors, to name but a few. The 'master' is extremely good at doing, but often cannot articulate the guiding principled knowledge which informs their actions to their students (Frascara 2007: 61; Ghassan, Diels & Barrett 2014: 252). Creative and design students start their apprenticeship learning journey through observing the master's execution and then thereafter model or imitate their actions (Collins, Brown & Newman 1987: 3; Frascara 2007: 64). The aesthetics of the execution of the student (apprentice) in these disciplines are evaluated by the 'master' who is regarded as an expert or connoisseur, with focus on crafting skills (Ghassen *et al.* 2014: 252; Norman 2016: 343). This results in creatives and designers who do not possess the skillset for lifelong learning, or whose knowledge is limited (Frascara 2007: 61; Norman 2016: 343). The South African Qualification Authority (2000: 14) prescribes that any registered qualification in South Africa should have both specific and critical cross-field outcomes that promote lifelong learning such as solving problems, working collaboratively, communicating effectively, being a responsible citizen and so more (The South African Qualifications Authority 2000: 18-19). It is clear to see that the traditional master-apprentice model lacks many of the skills to promote lifelong learning. This, however, does not mean that we need to 'throw out the baby with the bathwater' since the model still has value in studio-based modules. However, the traditional model needs to be transformed to educate creatives and designers rather than train them (Frascara 2007: 67; Norman 2016: 343).

The transformation of creative and design curricula requires the 'master' to recognise the role of theory and evidence-based design activity to transform learning in these disciplines. On the other hand, design curricula have to cater for the widened domain of design and the role designers can play

as creative thinkers and problem-solvers in society (Buchanan 2001: 9; Norman 2016: 344) for wicked problems such as the United Nations Sustainable Development Goals of 2030 and the global pandemic of COVID-19. The curriculum design team needs to consider the pedagogical approach to promoting such a transformation. Cognitive apprenticeship, originally coined by Collins *et al.* (1987), could be such an approach and creates learning experiences for students to learn specific techniques or methods in diverse circumstances to build the layers of complexity, rather than using learning experiences from the demands arising from the workplace (Ghassan *et al.* 2014: 253). The cognitive apprenticeship model exists of six steps, namely modelling, coaching, scaffolding, articulation, reflection and exploration (Collins 2006: 49; Collins *et al.* 1987: 2-3, 16). The transformation from the master-apprentice model to cognitive apprenticeship might not be too challenging. The two pedagogical approaches overlap in their modelling, coaching and scaffolding teaching activities, but cognitive apprenticeship deepens the education of 'apprentices' through additional teaching activities (i.e. articulation, reflection and exploration) (Collins 2006: 49; Collins *et al.* 1987: 2-3, 16). The cognitive apprenticeship model was originally developed to teach mathematics, reading and writing (Collins 1987: 1), but over the past few years it has been applied to a variety of disciplines, including that of creative and design education (*cf.* Ali, Tahir, Said & Tahir 2015; Rodríguez-Bonces & Ortiz 2016; De Bruin 2019; García-Cabrero, Hoover, Lajoie, Andrade-Santoyo, Quevedo-Rodríguez & Wong 2018; Lyons, McLaughlin, Khanova & Roth 2019).

The curriculum transformation also needs to promote a shift in power from the 'master' to create a teaching-learning partnership between the 'master' and 'apprentice' (Collins *et al.* 1987: 3; Frascara 2007: 64). The 'master' articulates the guiding principled knowledge which informs their actions to their students to solve problems (Collins *et al.* 1987: 3; Frascara 2007: 61). The cognitive and metacognitive knowledge embedded in the cognitive apprenticeship model enables students to become reflective practitioners that can self-monitor and self-correct, opposed to a duplicate of their 'master' (Collins *et al.* 1987: 3; Frascara 2007: 67). Thus, the focus shifts to the promotion of independence in learning rather than dependence on the teacher (Alexander 2008: 10).

In addition to the master-apprentice model, most studio-based modules follow a project-based learning approach. Project-based learning is an ideal

approach in the creative and design disciplines, since it supports traditional pedagogy of the master-apprentice model as well as the development of the student within the learning theory of cognitive apprenticeship (Lokey-Vega, Williamson & Bondeson 2018: 329-330). Students need to apply their cognitive and metacognitive knowledge to a specific context to solve a problem (Bell 2010: 40; Lokey-Vega *et al.* 2018: 330). Project-based learning also provides creative students with a voice for the choices they made during the design process (Frascara 2007: 65; Lokey-Vega *et al.* 2018: 330).

Project-based learning aligns with Dewey's experiential approach to teaching and learning (Lokey-Vega *et al.* 2018: 329), which describes a partnership between the teacher, student and curriculum (Carl 2012: 45,51). Dewey (1902: 11) states that a curriculum represents a process of continuous reconstruction, which moves from a person's early-age experiences into organised bodies of truth called studies. The various study areas in a curriculum provide the experiences which are the essence of the educational race (Dewey 1902: 12). Dewey's experiential approach aligns with the social constructivism view of other theorists such as Lev Vygotsky, Paulo Freire and Jean Piaget (Lokey-Vega *et al.* 2018: 329; Ornellas & Muñoz 2014: 60; Picciano 2017: 170; Wrenn & Wrenn 2009: 260). The social constructivism approach is concerned with 'changing educational practice to foster active learning and genuine understanding' (Gordon 2009: 50), that supports the concept that knowledge is created as a result of a 'shared process of enquiry and creation' (Wrenn & Wrenn 2009: 260).

The Phenomenon of Shifting to Online Teaching as a Result of COVID-19

As a result of the COVID-19 situation in South Africa, a private Higher Education Institution had to move studio-based modules online for multiple disciplines (e.g. Graphic Design, Interior Design, Copywriting, Fashion Design, Digital Design, Game Design and Development and Creative Development) taught at various levels (e.g. Higher Certificate, Degree and Honours levels) and offered on several campuses across the country. These shifts were necessitated by the principles of social distancing and different levels of lockdown that limited movement and face-to-face teaching. This change had to be guided by the institutional management within institutional and governmental policies to promote academic rigour, equity of delivery

across all campuses, and to ensure that the outcomes of the curriculum are still met and guided by the principle that no student will be left behind. Dr Blade Nzimande (2020: 2) announced the shift to multi-modal higher education on 30 April 2020 with two overarching themes: #SaveTheAcademicYear; #SaveLives. All institutions had a compulsory three-week recess to start conversations and preparations for all stakeholders (students, lecturers, sponsors, parents, third-party suppliers such as software providers and the workplace industries).

Many students at private higher education institutions share similar challenges when shifting to online learning as students at public institutions. The process started with an evaluation of student and lecturer access to hardware, software and data. A flexible academic delivery plan was devised to accommodate students with different levels of access and circumstances by realigning assessments for the first semester to accommodate this shift, with the possibility of adopting this approach for the second semester as well. Most studio-based modules offered had already been taught before the lockdown by means of a blended mode of delivery using a learning management system to provide the framework and structure needed for online teaching. Lecturers received training and support to use online teaching tools with which they were unfamiliar. Students received orientation, training and instructional material in the form of how-to-guides in preparation of the shift to the online virtual space. Emotional support structures were strengthened to assist lecturers and (especially) students with this transition, as well as with other possible emotional issues which might surface during this period.

Although most studio-based modules were originally designed for a blended mode of offering, the transition to fully online required of the academic team to rethink what content should be delivered to still meet the required outcomes of the curriculum, how it should be assessed to measure these outcomes, the student experience and interaction with the curriculum during this period, and the shifting role of the lecturer and student. Some modules in this space faced additional challenges such as the use of specialised licenced software, big files, high performance hardware, access to specific sites or contexts (e.g. Interior Design), art materials, printers, photography studios, special paper or tools (e.g. Fashion Design, Photography and Drawing), live models for drawing and several real-life clients for collaborative project briefs. In fact, many of the traditional processes and delivery approaches used in these studio-based modules had to be adjusted, with the lecturer and student relation-

ship at the centre. Student and lecturer workloads had to be considered and adjustments had to be made, not only in the size and scope of project briefs but also in the pacing. The semester was also extended by two months with each assessment's deadline structured to allow students to proceed at their own pace.

The COVID-19 crisis is therefore seen as a critical incident or change moment that necessitates the rethinking of conventions and traditions of project-based studio learning and thus provides the research opportunity to document this process as research in- and on-action with the authors as active participants. The next section reflects on present actions and decisions taken during the phenomenon, with a link between thinking (informed by the theoretical framework) and doing (actions were taken) (Schön 1987: 31).

Discussion and Reflection-in-action during the Phenomenon

The shift from the face-to-face studio environment to an online virtual space not only necessitates reconsidering the use of resources and deliverables, but also the way learning takes place. Although the generation of students attending Higher Education now is considered by some as digital natives, in South Africa the digital landscape is quite unique. In classes, we can often find extremes amongst students who are absolutely novice tech-users (switching on the computer, opening a programme, using the internet) to advanced users that use technology fluently. However, the digital migration is being accelerated during this extreme time in the history of the world. With education globally moving to the online virtual space 'the need for online access and devices in every home is now so dire that it may finally mobilize society to treat internet connectivity as a must-have rather than a nice-to-have' (Sal Khan in Sullivan 2020). South Africa's internet penetration remains low, with only 54% of the population being connected to the internet (De Villiers 2017). Almost 93% of active internet users in South Africa use their mobile phones, which is not necessarily a smartphone, to access the internet (Harrison 2019).

The nature of such a pedagogical shift needs a creative, resilient, responsive and supportive virtual learning environment to overcome the barriers of the social distancing requirements during COVID-19, while ensuring that no student gets left behind due to limited access to the online virtual spaces or other COVID-19-related reasons. Such a shift in the learning environment is open for critique, and not everybody agrees that studio-based curriculums can be taught online, sharing inherent limitations with patient or

laboratory-based curriculums (cf. University of the Witwatersrand 2020). Technology and pedagogy play an important role in empowering students in online learning environments since they can overcome many of the limits of the traditional classroom (e.g. timetables of classes, knowledge at a press of a button, authentic experiences and so more) (Fullan & Langworthy 2014: 4; García-Cabrero *et al.* 2018: 2). Although technology offers an alternative to avoid an educational standstill, online instruction needs to be properly grounded with a learning theory such as the cognitive apprenticeship model to promote student engagement, as opposed to merely uploading content online for students to access (García-Cabrero *et al.* 2018: 2, 19; Selwyn 2016: 1006). An online learning environment that supports the cognitive apprenticeship model needs to be designed with sociological context of the field, use sequencing of tasks with increasing complexity and diversity, include relevant knowledge content, and apply the steps of suitable learning theory (Collins 2006: 48; Collins *et al.* 1987: 14-20). Several authors have explored the move of project-based learning and cognitive apprenticeship to an online learning environment (*cf.* García-Cabrero *et al.* 2018; Heo, Lim & Youngsoo 2010; Koh, Herring & Hew 2010; Lokey-Vega *et al.* 2018; Tiantong & Siksen 2013).

The virtual learning environment within this transformation requires that the modelling, coaching and scaffolding of the traditional master-apprenticeship model needs to happen online. Face-to-face facilitation of knowledge and modelling by the 'master' were replaced by live virtual classes, which were recorded and made available for download and instructional videos of the 'master' performing a specific task. Class discussions, feedback and consultation sessions moved to the virtual space, with the use of discussion boards, chats and WhatsApp groups between student peers and the lecturer/s. Ali *et al.* (2015: 42) caution that although there are many advantages in using such virtual discussion spaces, these conversations need to be structured. The coaching step of the cognitive apprentice model can be applied in these discussions to provide students with guidance whilst they are busy completing the project (Ali *et al.* 2015: 48; García-Cabrero *et al.* 2018: 14). Scaffolding and sequencing were not truly affected by the shift, since these steps were already embedded in the original curriculum. The remaining three steps of the cognitive apprenticeship model had to be added in most modules that followed a traditional master-apprentice model. Articulation opportunities could be created for students online through virtual presentations of projects, discussion boards and project blogs (García-Cabrero *et al.* 2018: 15). Reflective practice

activities, which provide students with the opportunities to motivate their design decisions (Frascara 2007: 65), were embedded in most project-based assessments, but did not necessarily allow students to reflect and compare their understanding and executions to those of the masters and their peers. The solving of problems through exploration to frame and define a problem is the last step in the cognitive apprenticeship model. Exploration can be encouraged by writing broader project outcomes that encourage students to explore certain sub-outcomes that are of interest to them (Collins 2006: 51). Although exploration was encouraged in most project briefs before the COVID-19 situation, some that required observational research, site visits or community engagement had to be revised to adhere to the guidelines stipulated by the government of the country. Virtual and mixed realities may be a solution to enhance student exploration in creative and design disciplines.

The proposed pedagogical shift seems less problematic for both the 'master' and student if it is a partnership of responsibility where the student has more flexibility in time, space and pace, but also takes greater responsibility than before (Bell 2010: 41; Thompson & McDowell 2019: 116). Students had to take responsibility for their own learning with self-paced and flexible project deadlines to accommodate the restrictions of movement and social distancing within this phenomenon. Some students faced challenges to access the necessary resources (e.g. computers, software, data, tools), which had to be brought to the attention of the institution so that the necessary support could be given. Students without data are supported with a provision of data bundles, and some software companies extended free, personal in-home access to their software (Adobe 2020). However, for students with no hardware, alternative dates for assignment deadlines were provided and modules that use licenced software that is only available on campus had to stand over until campuses could reopen.

Lecturers had to encourage a partnership of responsibility by adapting their teaching approaching/method. However, the 'master' now needed the capabilities to articulate the guiding principled knowledge which informs their actions to their students in their modelling activities (Collins 2006: 49; Collins *et al.* 1987: 3; Frascara 2007: 61), which might be a challenge for some masters. The 'master' also needs to guide the learning of their students through additional steps beyond modelling, coaching and scaffolding (Collins 2006: 48; Collins *et al.* 1987: 14-20) within a virtual environment with which they also might not be comfortable. Lecturers and students received orientation

to use a virtual learning environment with extremes of novice and advanced users in both categories and many had to learn while teaching.

The unique South African digital landscape needs to be considered within the proposed pedagogical shift, since in most cases it requires a data-light approach. Data light is the principle that all content designed and developed needs to be provided in formats that use as little data as possible. This principle is important to ensure that students can continue with their learning journey with limited data and resources (e.g. a mobile phone and not a laptop). Multiple formats of learning content need to be available with asynchronous learning activities to enable students to work around their situational challenges (e.g. power, connectivity, social context) to provide an inclusive learning environment (University of Cape Town 2020: 2). Although the use of virtual and mixed reality is quite commonly used in today's classrooms to bridge some of these challenges, it is not advisable within the current situation in South Africa to opt for such high-tech solutions, since it may result in students without good internet connections and sufficient data to be excluded. Another challenge that also surfaced was that certain materials or drawing mediums for projects had to be changed, since these were not available on the specific level of lockdown at stores/online stores. In some cases where technology could not assist a pedagogical shift, the module was moved to the next semester.

Reflection-on-action and Way Forward

A crisis is not necessarily a disaster, but a turning point or high-point where business as usual cannot take place due to a failure of sorts (Dhunpath, Amin & Devroop 2018: 1-5). The South African Higher Education landscape has seen several crisis moments over the past years regarding inequalities, marginalisation and student uprisings (e.g. 2015 #RhodesMustFall and #FeesMustFall). Five years down the line we are reflecting on actions taken during a new unforeseen crisis that not only produced new challenges but also revealed pre-existing shortcomings in pedagogy and society. The COVID-19 crisis is described in this article as per Dhunpath *et al.*'s (2018: 1-5) contestation (i.e. engage and understand the crisis) and contemplation (i.e. examine, observe and reflect) phases; however, we now extend the reflection to reflection-on-action. Reflection-on-action includes reflecting on the challenges faced, lessons learned and the emerging opportunities (Schön

1987: 26). Our reflection-on-action includes resilient transformation in a crisis, solution-focused design thinking and the positive belief in the future (Brown, 2008). The future role of higher education during a crisis is important, since this space should 'inspire innovation, social experimentation, new forms of reflection and the production of knowledge, to create a better future for all those who live on the planet' (Dhunpath *et al.* 2018: 4). Therefore, the reflection-on-action also reflects on the need for a quick recovery after this crisis, upholding the integrity of the curriculum and the future employability of students graduating at the end of the academic year.

One of the emerging opportunities presented by the shift to online teaching is the break with tradition that provides the potential to shift teaching and learning towards better alignment with 21st-century requirements, as outlined in the first section of this chapter. Design education in South Africa is slowly transforming to embrace these new socio-economic and technological challenges and opportunities, with the focus shifting from 'crafting' and 'execution' to 'strategy' and 'sense-making' with people and planet-centred, democratised approaches. The need for this transformation echoes discussions at the 2017 conference of the Design Educators Forum of Southern Africa (Botes & Giloi 2017). The theme of the conference was on decolonising design education. The questions that were asked included which way design education should go – should the focus be to educate graduates only for the workplace, or with holistic skills to make a positive impact on a world? Design educators pointed out the need and 'potential for design students to learn to become ethical, empathetic, critical and moral co-designers rather than mere operators of technology driven by a profit motive' (Botes & Giloi 2017: iii-iv). The 2019 DEFSA conference further extended this debate and asked 'how design education might prepare students for an unpredictable future in which they will have to rapidly acquire new knowledge, learn new skills and adapt to new contexts and cultures' (Botes & Giloi 2019: iii-iv). Two aspects that stood out were the need for students to 'be faithful to their local culture and have greater agency over their learning' (Botes & Giloi 2019: iii). Both these recent DEFSA conferences expressed and explored the need for change in design education and echoed the discourse on the changing nature of the discipline, together with a changing education landscape (Voûte *et al.* 2020: 54).

Our reflection needs to be seen against the background of the continuing discourse for change in Higher Education in South Africa, from both general and discipline specific perspectives. However, nothing could

prepare us for a crisis of the COVID-19 nature, its unpredictability and scope, and the speed needed for adjusting courses and delivery. The 'contestation' and 'contemplation' phases merged with reflection-on-action, with little time to pause. One of the first realisations was that to bridge the unthinkable, we had to think the unthinkable and challenge the status quo of design education. Such an overdue challenge was that of the overreliance on the traditional (and comfortable) way of teaching in the master-apprentice model. By moving the studio and project-based teaching and learning online, the relationship between the lecturer as 'master' and student was shifted together with the curriculum (i.e. principled and procedural knowledge and theory) to create a new partnership between the lecturer now as facilitator and student as co-creator of knowledge. This change in the power dynamics of teaching and learning in design education is supported by the underlying learning theory of the cognitive apprenticeship model.

The question needs to be asked why the traditional master-apprentice model could not simply be shifted to the online virtual space. One could easily fall back on the comfort of the master-apprentice model and try to emulate this, but the nature of the virtual classrooms and the new awareness of what students do in the studio time force a rethink of delivery, actions and value. The choices that our academic teams and leadership collectively make may take the direction of either being reactive to the crisis or proactive in driving change. Some factors are unpredictable and outside our influence. What we could change was the nature of the project briefs and with a shift in emphasis on crafting to concept, process and reflection and broader skills. Rubrics were also adjusted to reflect this change, resulting in a renewed scrutiny of the way creative and design work is assessed. Hard choices regarding workload had to be made and some project briefs had to be dropped, challenging the traditional notion of what ought to be in and the size of an exit-level portfolio. Rather, the focus shifted to fewer, better developed projects and the broader skillset and insights required in industry and future careers of our students. Designers in the local industry have already shifted to the virtual space for continued education as an ongoing activity, with online courses perceived positively and trusted to deliver contents and courses, when needed, in flexible modes (Van Zyl 2018: 81). One of the positive outcomes of a shift to a virtual space is that students rely less on the master for directions, and ought to be better prepared for future continued education as a result of taking greater responsibility for their learning, actions and tasks.

At this point we cannot evaluate the consequences of these choices, but so far both students and lecturers have demonstrated a willingness to shift modes and have shown resourcefulness during the first two weeks of online delivery (the time when this chapter was written). The online virtual space already provided new opportunities for internal and external collaboration. Furthermore, anecdotal feedback and comments recorded during online sessions indicate that lecturers and students share mutual empathy and care. However, such an unplanned shift from traditional face-to-face studio space to a virtual space is not without challenges. One of these can be that students now have more control over their learning and that this may result in students learning to master only what they want to without scaffolding their skills (Ghassan *et al.* 2014: 252). This can be overcome with a well-designed, structured syllabus suitable for blended spaces; however, within the time and capacity limits, some limitations and shortcomings will most certainly be revealed as the unusual year proceeds and will require ongoing agility to ensure students are not left behind and all learning outcomes are met. Structures are put in place to collect regular feedback from students and lecturers to identify unintended shortcomings and these will need to be addressed as they are identified and understood.

Some design briefs require access to people (such as for observational research and community engagement). Some of these important activities can be shifted online but could be challenging, or not safe. After consultations with lecturers, some of these briefs were replaced with briefs that specifically challenge designers to envisage solutions for the COVID-19 crisis (such as the Loeries – #CreateChange Campaign). This way students and lecturers can connect with broader local and global societies during the crisis, and thus learn the value of contribution as a designer.

The other challenge that has already revealed itself is that of access to resources (computers, data, software, tools, equipment, mediums). Despite being a private provider, many of our students used the resources on campus. Moreover, whilst students may keep up with theoretical learning, some of the practical applications will fall behind. A flexible and empathic approach is needed in such an unpredictable situation. An education system cannot evolve without keeping the mental and physical wellness of the students and lecturers in mind, especially when the traditions and conventions are challenged. It is here where a robust model such as the cognitive apprentice model provides guidelines and insights to make informed choices and reduce risk.

It also becomes clear that not all projects and modules can be taught online. Some specialised software modules or skills will have to stand over for face-to-face instruction. If such blended learning needs to continue, then it becomes clear that the mobilisation of data and suitable hardware is a must-have, rather than a nice-to-have and that our capacity must increase in future to deal with the modules that are now seen as impossible to teach online.

Limitations of the Research and Opportunities for Future Research

Reflection in and on action becomes challenging when the environment is in constant flux and characterised by uncertainty, especially within a crisis moment such as COVID-19. This study exhibits limitations of a contextually embedded case study without external validity at this point, due to the specific crisis's unpredictability, scope, and the speed needed to transform the mode of delivery to avoid an educational standstill. The limitations of the researchers' reflection also need to be read within the dimension of the human capability of handling such a complex crisis as COVID-19. This chapter rather provides a starting point for further research on the resilient transformation of studio-based teaching and learning in creative and design disciplines towards a cognitive apprenticeship model to promote innovation, experimentation and improved futures for all (Dhunpath *et al.* 2018: 4; Dorst 2019: 118; Norman 2016: 343). The shift to a virtual classroom also leaves a digital audit trail for academic teams and researchers for possible research opportunities, which would not be available within a normal face-to-face class.

Concluding Remarks

The day after President Cyril Ramaphosa had declared a national state of disaster, he said that '[t]he Thuma Mina moment is upon us, perhaps as never before' (Ramaphosa 2020). Upon reflecting on the events over the past few weeks, it is clear to see how this slogan guided most stakeholders' decisions to overcome challenges through empathy, support and kindness at the root of every decision. The local and global impact of COVID-19 will most likely be written up in history as a global pandemic, but for some, it provided a 'shifting moment' (Madonsela 2020).

This chapter reflected upon the pedagogical shift needed in studio-

based teaching and learning in creative and design disciplines in South Africa to avoid an education standstill; however, this is only one part of the story that unfolded during the reflection on the COVID-19 crisis at this point. The other part is the realisation that design educators and researchers need to take a hard look at design education and challenge the status quo of the way design is being taught in South Africa. Knowledge needs to be deconstructed to expose the values, assumptions and beliefs of the master-apprentice model that hinders the transformation needed of the curriculum of studio-based modules. Design education needs continuous change to keep up with the ever-changing and challenging world (Noël 2020: 6), since these disciplines are constantly changing and shifting their focus. Dorst (2015: 130) calls this a 'formidable challenge' for staff and students and points out the need to be active on many fronts to bring about transformation in a complex organisation such as an educational institution. This transformation may require the deployment of some initiatives such as the retraining of lecturers, appointment of new staff members with different skillsets, the stimulation of debate through talks, exhibitions, research labs and multidisciplinary design approaches (Dorst 2015: 130). These need to be visible changes rather to show, than trying to convince through talk and argument.

Design educators in South Africa need to ask themselves whether this is our shifting moment to speed up the necessary transformation of studio-based modules. However, this is no small task and in the words of his excellency, President Cyril Ramaphosa would require a 'Thuma Mina moment' for all design educators in the country to pull together to make this transformation.

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Reframing Teaching African Music and Dance in the Tertiary Education Context: Alternatives and Pedagogical Solutions for Online and Other Forms of Non-contact Teaching in the Face of the COVID-19 Pandemic

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Abstract

The University of KwaZulu-Natal (UKZN) has been offering practical study in African Music and Dance (AMD) for over two decades since 1996. Always in contact mode with the genre specialist providing either individual or group instruction, learning is by rote where students carefully observe examples presented by the practical lecturer, as well as carefully outlined techniques to be used in mastering the instrument or dance style under study. In light of the COVID-19 global pandemic, this teaching model has to be reviewed immediately and alternative ways of working remotely with students devised. This educational practice is against the backdrop of indigenous music transmission that is characterised by in-person engagement between a specialist and the tutor/learner. A method that UKZN AMD program has proved works well is adopting indigenous practices of enculturation from the traditional non-formal contexts for learning African Music and Dance to the

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institutional setting in the tertiary education setting – but by still maintaining the wisdom, creativity, interpretation that flourishes as a result of this non-formal method of teaching. In addition to the already removed enculturative setting, we are now at a new juncture where we need to offer these practical modules via non-contact instruction. This chapter will examine the work in two different scenarios of the UKZN African Music and dance (AMD program). The first, individual instrumental instruction, in this case, the palmwine guitar from Ghana, explores a re-imagination of its instructional mode within the context of a remote teaching and online assessment. The second example in the context of ensemble work that involves group work with different members playing percussion, singing and dancing, and in this case, the genre/style provided is *ngalanga* dance-drumming from Mozambique.

Keywords: Palmwine music, African guitar pedagogy, performance practice, African Music and Dance, group instruction, *Ngalanga* music, *Ngalanga* instruction, remote instruction.

Introduction

The University of KwaZulu-Natal, Howard College Campus in the School of Arts – College of Humanities has amongst the qualifications on offer a Bachelor of Arts with a specialization in African Music and Dance (AMD). In the curriculum, students are introduced to a variety of African music and dance genres both from within South African cultural practices and also extended to other regions of Africa to get students acquainted with a wide variety of genres and aesthetic styles. This approach increases and augments their knowledge base, establishing them as versatile artists who can engage in a broad range of varying performance genres and contexts. This chapter presents examples of two different teaching-learning contexts to explore how the University of KwaZulu-Natal African Music and Dance practical staff are engaging with this new reality of non-contact remote teaching in the face of the vicious global pandemic COVID-19. The AMD program includes both individual tuition on a specific instrument, as well as group instruction in dance and ensemble work. Practical teachers in the program are recruited based on their competencies in particular music/dance genres and who can teach students at varying levels in the tertiary education setting. Ensemble classes meet twice a week, while in-

dividual instrumental tuition is once a week for 45 minutes.

The current Covid-19 pandemic has presented a situation where university teaching has embraced remote instruction. Although online learning has gained ground around the world in recent years, the pandemic has immediately compelled university educators to engage with an online mode of teaching and learning. According to Johnson (2016), a theoretical orientation that captures the nuances of experiential learning to frame online learning activities is one where the individual and social learning contexts engage. To achieve these nuances, Johnson (2017) advances the need for collaborative learning designs that support students' learning in an online environment. According to Lock and Johnson (2015), three such types enhance interactive learning exchanges include student-student, student-to-content, and student-to-instructor. This understanding suggests that digital tools become invaluable to ensure a complete learning process as Johnson (2017) notes, a well-designed online learning environment offers unlimited access to learning materials and management of the learning process with flexible schedules. In developing a theoretical orientation that ties these notions together, Johnson suggests, is to embrace the constructivism paradigm. Thus, the chapter espouses this theory to frame its discussion that proposes an alternative teaching and learning process for African Music and Dance in a remote non-contact teaching context.

The notion of constructivism has its roots in the works of Piaget, Gruber and Vonèche (1977) and Dewey (1938), and understands one's experience in learning through action. According to Johnson (2016), educational researchers including Bandura (1981), Jonassen (2013), and Vygotsky (1978) embraced this theoretical orientation to explore the connection between individual creation and making from their experiences. She highlights the theory's primary focus, which centres on how individuals construct their learning of the subject matter and performance skills through how they understand the process. These experiences thus become essential to success in an online learning environment (Garrison 2011).

The theory of constructivism defines teaching and learning within the context of the active involvement of the learner to construct their knowledge rather than be passive receivers of information (Sharma & Chawla 2014). Within this theoretical approach, the learning activities of the learner are foreground on notions that leave room for them to uncover and create their knowledge base by interacting with the learning resources provided to them. Thus, the learner constructs the knowledge both individually and by an

engagement with the learning materials within the context. Sharma and Chawla (2014) acknowledge that the theoretical paradigm inadvertently reconfigures the role of the teacher from one of transmitting knowledge to a facilitator. In framing an alternative approach to teaching African Music and Dance from a remote learning context, the constructivist theoretical orientation provides a guide that assists in designing a course that presents learners room to construct their own learning experiences when they engage with the learning materials. Data for this chapter embrace an autoethnography methodology (Spry 2011), where the authors draw on their experiences in designing syllabi for the program that over the years aims to envisage and design an online pedagogy for African Music and Dance that caters for its students without necessarily losing the very essence of the module.

Mr Eric Sunu Doe, originally from Ghana, is currently completing his doctoral studies on revitalizing palmwine music in Ghana at UKZN, and his research and teaching area is Ghanaian palmwine guitar tradition. He has been teaching in the program for three years and has groomed several versatile guitarists. Before this, he taught at the University of Ghana, where he constituted both a pop ensemble and created his own Legon Palmwine Band, which has grown in popularity over time. At UKZN, the students would have studied *maskanda* guitar in the previous semester, and therefore somewhat familiar with the instrument and coordination between playing and singing. Of course, the palmwine guitar style has very different nuances, tunings, and fingerpicking styles, so students must immerse themselves by exploring a new culture and opening their ears and sensitivities to a new music tradition. Mr José Albèrto Chemane, originally from Mozambique recently completed his MA studies at UKZN on Chopi *ngalanga* dance drumming (2018). A proficient drummer in a broad range of styles, he has been one of the leaders of the AMD Ensemble for almost ten years. His ensembles have introduced local South African, African Music and Dance students to an area of performance they were previously unfamiliar with, but as the semester progresses, they become proficient performers. Chemane draws on his primary research on *ngalanga* tradition in his classes.

Palm-wine Guitar Scenario

The very essence of teaching Ghanaian palmwine guitar in the AMD program is to generally introduce the students to this unique indigenous music tradition

that emerged along the coast of West Africa in the late 19th century. Schmidt (1994:4) observes that its uniqueness lies in how it fuses various 'indigenous musical resources such as rhythm, instruments, performance approaches and imported guitar traditions' introduced as a result of contact with Europeans. In Ghana, this fusion characterizes a blend of rhythmic influences drawn from such indigenous dance-music forms as the *osibi*, *kurunku*, and *adakam*, and played in a variety of fingerpicking patterns on the guitar. Also, it embraces a singing approach that resonates with Akan storytelling heritage, which is characterized by proverbial and philosophical commentary on the social life and values of the people (Coplan 1978). Thus, a group of stylistic forms termed *sadwa ase* styles, which include the *mainline*, *fireman*, *dagomba*,[1] *odonson*,[2] *kwaw*[3], and *amponsah*[4] characterize palmwine music in Ghana. Each of these *sadwa ase* styles comes with its unique musical characteristics. For instance, writing on the music of Koo Nimo, Kaye (1999) observes that *dagomba* form is tuned conventionally [E-A-d-g-b-e]. Its harmonic structure derived from the seven diatonic scale of a Western 'major' key emphasizing on two chords – tonic major (I), and dominant seventh (V_7). Kaye's description of the tuning system and harmonic structures, as well as what Collins (2006) describes as a two-fingerpicking technique that engages the thumb and index finger in alternation, are standard features of *sadwa ase* styles. However, their unique stylistic nuances are on the emphasis placed on the chord progressions. For instance, while the *dagomba* style emphasizes on a two major chord progression, the *odonson* style features the median minor chord (iii) and the subdominant major chord (IV). Also, the *amponsah* and *mainline* styles feature the major chords (I-IV-V_7).

Thus, when teaching such a music tradition within an institutional setting as the university, one is mindful of not losing the main elements that characterize the tradition. In drawing up a syllabus for Palmwine Guitar for the UKZN AMD program, it is essential to capture not only the historical nuances of the music tradition but also its performance practice. Hence, the module aims to introduce students to the music tradition and its repertoire by emphasizing articulation, dynamics, rhythmic ability, and skills, which are

[1] https://www.youtube.com/watch?v=KyCJ6SMYyIU
[2] https://www.youtube.com/watch?v=UioOniJ3GJU
[3] https://www.youtube.com/watch?v=eH_mFCwqgGs
[4] https://www.youtube.com/watch?v=O_W3LD10CzQ

fundamental to the performance of palmwine music. The students are guided in the application of concepts and techniques that aid in playing palmwine guitar. Also, an approach to singing is employed to assist students in developing technical proficiency in the performance of the music tradition. The expected learning outcomes upon the completion of the module often include,

- a demonstration of correct fingerpicking techniques in playing palmwine guitar;
- an understanding of the basic concepts of palmwine guitar and its repertoire; and
- to perform in a solo or an ensemble of palmwine music.

The mode of delivery embraced for this module is one that involves a hands-on approach where learning is by rote. Students are expected to carefully observe and imitate what the instructor demonstrates in class. This approach is realized through the teaching of songs and while students learn the song, they gradually gain the techniques employed in playing each of the *sadwa ase*. As time is of the essence when dealing with institutional instruction of practical instruments, in designing the syllabus for palmwine guitar, four main types of the *sadwa ase* styles – *kwaw*, *odonson*, *dagomba*, *amponsah* are taught. The syllabus design takes into account the twelve weeks of instruction the academic calendar provides and evenly spread the four *sadwa ase* styles. Each style is thus taught over up to three weeks, as illustrated in table 1 below. The lessons for each style are structured to embrace a week where the instructor introduces specific styles that involve teaching a song and its associated lyrics. Another week is used to introduce and demonstrate the fingerpicking technique or approach to a particular style, consisting of teaching students how to employ the nuances of the style's techniques in the song. In the final week of instruction on a particular style, the instructor introduces students to the performance approaches to the styles. It entails working with students on the coordination between synchronously playing the guitar while singing in performance. Throughout the process, the instructor pays attention to articulation, rhythmic fluency in the fingerpicking technique and correct diction in songs.

Individual classes are usually the mode of instruction. On occasion, where enrolment is large, students are paired or put in groups for their weekly

sessions. Even in pairs or groups, each student's unique learning capabilities remain the ultimate concern of instruction.

Palmwine Guitar Course Delivery Plan/Schedule		
Planned Session	**Session Outcomes**	**Planned Teaching Activity**
Week 1	Introduction to the *kwaw sadwa ase* style	Introduction to the *kwaw* style & teach *Onua pa, due* song and its lyrics
Week 2	Learn Fingerpicking technique/approach to *kwaw* style	Teach fingerpicking technique/approach to *kwaw* style in the *Onua pa, due* song
Week 3	Learn performance approach to the *kwaw* style	Work on coordinating playing guitar and singing of the *Onua pa, due* song

Table 1: Excerpt of a model contact instruction syllabus for palmwine guitar

In addition to students drawing encouragement and learning from their classmates, the extra sessions are offered to cater to individual learning challenges. What happens in this scenario is that when a student in the group learns a technique before their classmates, they can quickly assist their colleagues in the learning process. This peer teaching is helpful, as for the majority of the students, it is their first time encountering the music tradition and for them it takes a little longer to grasp some of the concepts introduced to them. Also, students who assist their colleagues in the learning process tend to enhance their understanding of the ideas further.

In light of the coronavirus Covid-19 global pandemic, this mode of instruction has had to be reviewed and re-imagined within the context of a remote teaching and online assessment. For the palmwine guitar module, it means exploring alternative modes of instruction other than the contact mode. Thus, within this context, it becomes necessary to embrace online teaching and learning. According to Johnson (2017), online instruction in the higher education sector has seen exponential growth over the last decade. She observes that online learning outcomes within the sector equal those of the

traditional learning environments leading higher education music programs to further explore the online learning context (Johnson 2017: 439). The findings of her study suggest a pedagogical shift in embracing the fully online mode of teaching. In that case, although the method of instruction of palmwine music in the African Music and Dance program slightly changes, its pedagogical essence remains the same, as Table 2 below illustrates.

Palmwine Guitar Plan of action for remote learning
(Examples include Live teaching with Zoom, using WhatsApp, Face Time, recording of lectures, scripting lectures, Loom, PowerPoint with audio, social media, among others)

Planned Session	**Session Outcomes**	**Planned delivery mode and remote teaching activity**
Week 1	Introduction to the *odonson* style	Class session via Zoom. Also, record demonstration of *Odo Akosombo/ Senkyenbuyaa* to be uploaded onto Moodle as a media file
Week 2	Learn *odonson* fingerpicking technique/approach to the style	Class session via Zoom. Also, record a demonstration of guitar technique to *Odo Akosombo/Senkyenbuyaa* to be uploaded onto Moodle as a media file
Week 3	Learn the approach to performing in the *odonson* style	Class session via Zoom. Also, record demonstration of the approach to performing *Odo Akosombo/ Senkyenbuyaa* to be uploaded onto Moodle as a media file

Table 1: Excerpt table of the proposed syllabus for Palmwine Guitar based on the module template plan for remote teaching developed by the Faculty of Humanities

In the first week, the students will focus on learning the lyrics to the songs that accompany a particular style. Because students will learn songs from a different music culture, which they are unfamiliar with, it is essential to ensure correct pronunciation of lyrics. Thus, students repeatedly pronounce every line of each song slowly and with great care and attention. In every

session, the idea is to review and assist students to articulate and enunciate the words of the songs properly before moving forward with the topic for the day. The general aim remains the same – to introduce students to palmwine guitar and its repertoire with the emphasis still on articulation, dynamics, rhythmic ability, and skill, which are fundamental to the performance of palmwine music.

The specific learning outcomes will also be the same as with the contact mode of instruction; however, there would be a slight change in expectation when it comes to student performance. With the contact mode of instruction, students were expected and encouraged to, besides performing as a solo, also engage in ensemble performances of the palmwine music tradition. The new expectation will thus require of the student to only perform as a solo act as a result of remote lessons and students residing in different cities throughout KwaZulu-Natal province. This has become necessary because of new regulations passed to curb the spread of COVID-19. Accordingly, the challenge of putting together an ensemble with fellow course mates as would have been the case will be difficult. The solo performance, however, does not take anything away from the performance nuances of the music tradition as, besides the fact that ensembles were known to have promoted palmwine music, there is also an equal abundance of solo performances (Collins 2018; Nketia 1994). The content topics in remote non-contact offering of the course will cover palmwine music performance techniques and approaches, palmwine repertoire, and the performance practice of the music tradition.

Live teaching sessions will be organized via virtual platforms as provided by the university. In this case, the Zoom platform is beneficial, as it enables students to see a live demonstration of the fingerpicking techniques. Students can also use the opportunity to ask questions, where necessary. This option takes into consideration the fact that although the session is in the form of a group or class, individual students will learn in the comfort of their personal spaces. The drawback of this approach is where there would be the tendency of some students either slowing down or moving faster than their other classmates in the class, because they would initially struggle to grasp the concepts, or understand them quicker than their classmates within the timeframe of the session. Also, where the students would have been at hand in assisting their colleagues in the class situation, the option is not available with the remote teaching. Recorded demonstrations for each week's lesson are uploaded as media files onto Moodle, the official UKZN Learning

Management System for students. This provides added support for students who encounter challenges in moving with the tempo of the class. The challenge posed with media files on Moodle is the inability of the platform to accommodate video files or large files; thus, it is welcoming that the university has procured *Kaltura*, another online platform that provides this mode of uploading such media files. The other option is to explore the transfer of videos via class WhatsApp platforms. Students who need further assistance will be provided with the possibility of direct contact with the instructor at designated times, as would be announced via WhatsApp.

What does this new re-imagined mode of remote instruction mean for an assessment? Initially, student assessments happened in two ways – where there was a weekly assessment of how students comprehend the concepts and techniques, as the instructor was able to observe them in class. This form of continuous assessment assists in learning the individual needs of the students and providing feedback that helps them meet or overcome their specific challenges. The other assessment option was a performance presentation of the songs taught during the period to a panel at specific dates during the semester, a midterm assessment, pre-examination, and their final exit recital. In the new remote mode of instruction, assessments will entail students performing the songs they learn to a panel via the Zoom platform. The student will be assigned a specific time slot to log onto the platform on the assessment day, similar to what would have happened in contact instruction as described above. The only difference is the migration onto the online platform. Since we will be dealing with internet connectivity and issues often associated with such connections, an alternative arrangement for assessment will require of the students also to record themselves performing the songs and forwarding them to the module coordinator via specified online platforms on the due date. This addresses instances where, because of connectivity issues, it becomes difficult to give a critical assessment of the performance by the student. The mode of the recording will be video as the examiners would be able to identify the student performing directly.

Continuous assessment within this context will constitute a short essay on the history, the styles, and the exponents of the palmwine music tradition in Ghana. This will involve students conducting library searches on the music tradition, in addition to a reading list that will be provided by the instructor to answer set questions. This assessment form, which will constitute 10% of their total marks, is a new inclusion that will offer a personal understanding of the

sociocultural context within which the music tradition emerged and now allows them to draw upon in their performances. Also, students will be required to upload a video recording of their performance of songs learned in weeks 4 and 10. The video is necessary because, in addition to assessing the student's progress, it is essential to watch how students incorporate the techniques and the nuances of the music tradition into their performances. The midterm assessment will represent 20% of their continuous assessment, with students being required to perform the first two songs learned. There would also be a pre-exam, which will constitute 30% of their continuous assessment, with the students required to play all four songs taught throughout the semester. 40% of the student's assessment will consist of their exit recital, and 45-minute concert incorporating all seven genres of music and dance learned over the three years of their undergraduate curriculum, which includes *maskanda* guitar, *timbila* xylophones, *umakhweyana* bow, *isicathamiya, ngoma* dance and gumboot dance.

The major challenge as envisaged for the remote instruction of palmwine guitar in this module will be the personal attention paid to individual students' learning preferences with regard to how they respond to the learning. The contact mode of instruction provided a situation where the instructor picked up and addressed emerging challenges. However, with remote learning, there is the likelihood of a delayed response in picking up such issues to be addressed. Also, although the students will have the opportunity to contact the instructor directly for follow-up, the instructor must become proactive in also often reaching out to the learners. In this way, the instructor can pick up the challenges the students face at an early stage; thus, contributing towards instruction via remote mode becoming increasingly seamless and effective.

Ngalanga Dance Drumming

Ngalanga is a rich and vibrant dance-drumming tradition of the Chopi from Mozambique,[5] and its transmission within a tertiary education context contributes significantly towards its continuous practice and preservation (Chemane 2018). Its origins and development resonate with Chopi history,

[5] The Chopi people had strong ties with the former Zimbabwe's *Mocaranga* kingdom to the extent of, in some point of their exodus, having been known as the *Mucaranga* who spoke *tchiChopi* (Lichuge 2016).

which accounts to its early interactions with the Karanga from Zimbabwe (Tracey 1940/70; Lichuge 2016; Chemane 2018). Similar to other Chopi music styles, *ngalanga* performances occur within a myriad of socio-musical contexts including rites of passages, initiation, remembrance ceremonies, weddings and official ceremonies. Its performance conventions include a fusion of routines systematically tied by dance, drumming, and singing. It characterizes movements such as *mutsitso*, *mungenu*, *kuwemisa*, and *tshigaza mavingwa*, each comprising a distinct approach and repertoire unique to its aesthetics (Chemane 2018). For instance, *mutsitso* is one aspect of *ngalanga* which employs intensive drumming. At the same time, in *mungenu* and *tshigaza, mavingwa*, such routines as *kutchatcha, kukavata* and *makhara* are nurtured and give evidence to the distinct dance aesthetics intrinsic to *ngalanga* (ibid). Contemporary uses of *ngalanga* include its fusing with Chopi and other popular genres.[6]

Drumming in *ngalanga* is orchestrated and features the following support drums each playing a specific role. For instance, *txindzomana* (figure 1) provides the timeline; *ntxinga* (figure 2), the lead drum, accompanying the soloist-dancer and adding a thrill to it; and a *gulu/txikhulu* (figure 3), providing the low timeline and groove to the music. Playing all three drums involves using sticks made from dry tree branches; the *gulu* sticks are an exception, as they are mallet-like sticks. Also, one or two *mbila* xylophones (figure 4) and the shakers provide the melody and rhythm aspect of the music. *Ngalanga* attire includes a handmade raffia skirt, a piece of material (*nguwu*) wrapped around the waist, and a rattle shaker, i.e. *mitchatcha* (figure 5) tied to the dancer's leg. The dance gestures are energetic and incorporate *kutchatcha*, i.e. stamping, and *kukavata*, dance routines. Both dance and drumming incorporate solo extemporization. In the traditional choreography, dancers stand in a semi-circle opposite the rhythm support creating. The centre of the circle becomes the dance floor, where most interaction and extemporization take place (Chemane 2018).

The course draws on the conventions of *ngalanga* tradition as reflected in dance, drumming and choreography. Instruction emphasizes interactive demonstration, replication, and participation. The content draws on *mutsitso* and *mungenisu* repertoire to allow students to grasp the basics of playing the timeline, *kutchatcha* (stamping step) and its variation, *mungenisu (*the entry

[6] https://www.youtube.com/watch?v=sD50DKuZ9eQ

routine), to execute the *kudana* and *gwinya* (call routine). Students also learn the accompanying drum patterns specific to each routine. Progressively, the students learn selected *ngalanga* repertoire in a manner that allows them mastery of the techniques for both the dance and drumming.

Figure 1. *Tshindzomana* with sticks.
Picture by Jose A.D. Chemane on 28 May 2017

Figure 2. *Ntshinga*.
Picture by Jose A.D. Chemane on 28 May 2017

Figure 3. *Tshikhulu*. Picture by José A.D. Chemane 28 May 2017

Figure 4. *Mbila* xylophone.
Picture by Jose A.D. Chemane, 28 May 2017

Figure 5. *Mitchatcha*.
Picture by Jose A.D. Chemane, 28 May 2017

Figure 6. Dancers in *ngalanga* attire. Picture by Jose A.D. Chemane, 17 December 2017

The course systematically runs towards a final assessment that entails students learning the repertoire and choreography, and rehearsing for their final live performance. As per the specifics of teaching the repertoire, classes start with a general warm-up, followed by briefly discussing the lesson plan. Subsequently, the instructor gradually introduces the repertoire as outlined in the syllabus to the class. For instance, in a typical class scenario, the instructor demonstrates the first step, *kutchatcha*, to be repeated. While the dance section practises this step, he instructs the rhythm section to add *tshindzomana* (the timeline) and the specific accompanying drum pattern to *kutchatcha*, which frames *ntshinga* (lead drum). Subsequently, the teacher introduces a call-and-

response session to the class, which forms part of an exercise that adds thrill to the repetition. In the meantime, the rhythm section would add a second timeline played on the *tshikhulu* to complement the support of the dance. The instructor then demonstrates *mungenisu*, *kudana* and *gwinya* routines with the student, expected to be learnt and practised in an integrated manner, and students' interchange.

Songs are learned collectively through a word-by-word transcription process. Then, the harmonization process follows. Specific to *ngalanga* drumming, students are taught the importance of warming up before playing to develop proper hand motion and stick control. Also, *ngalanga* drum instruction explores scatting to enhance the learning process. By scatting drum patterns, students allow themselves to master drum patterns which they initially find challenging. Scat is a vocal Jazz technique, and instrumentalists use it to approach improvisation. It became well-known within the Jazz circles through Louis Armstrong's 1926 recording 'Heebie Jeebies'. Different interpretations underpin scat; however, as a musical artefact, scat is meaningful without needing to carry tangible signifiers (Nattiez 1990). As applied to *ngalanga* instruction, scat assists students' drumming skills, and improve lyric articulation, pulse, and rhythmic feel. Also, students are encouraged to take written or voice notes to capture what they hear, which speaks to their needs in terms of memory aid.

1	**e**	**+**	**2**	**+**	**3**	**e**	**+**	**4**	**+**
Tã		ka	tã	gõ	tã	(.)	ka	tã	gõ

1	**e**	**+**	**2**	**+**	**3**	**e**	**+**	**4**	**+**
Tã	gõ	(.)	tã	(.)	tã	gõ	(.)	tã	(.)

Assessments are repertoire-based. In a class assessment scenario, it is the expectation that students perform the dance steps with acquired techniques, playing the various drum parts and accompanying another student. There is also an assessment of the mastery of choreography. In a public performance scenario, besides individual performance, teamwork skills by ensuring the success of the ensemble are also checked.

Students assessments are in three contexts – a continuous assessment, which seeks to identify the challenges students face in order to manage their progress. The assessment considers weekly tasks in terms of mastery of dance

steps/routine and drum techniques. Thus, the task of students is to perform the repertoire both individually and in a group. It becomes necessary to evaluate the individual as well as the group components as the midterm and final assessments are framed around those aspects. Hence, the instructor continuously checks on student performance to ensure progress. Also, at the midterm assessment, students are expected to perform selected repertoire in terms of dance, drumming, singing, and choreography. It also looks at drumming and dance in both execution and technique, choreography, and singing. The final exam comprises two parts – live performance and a studio exam. Here the same requirements apply, with the semester mark reflecting the general performance.

Ngalanga Online Instruction

The objectives of the re-imagined remote instruction align with contact instruction, as the module still aims to introduce the students to the *ngalanga* tradition, although the pedagogy differs. The goal of the module is to ensure that students would gain basic knowledge of the performance practices of the dance drumming tradition. The expectation is that students record themselves performing selected repertoire and techniques in both dance and drumming. Being cognizant of limited access to instruments, e.g. hand drums, students will be encouraged to creatively explore other sound-producing resources, such as recycled bucket drums for the learning process.[7] The repertoire for this mode of instruction will be prepared and packaged into a series of instructional audio and video files. A set of video files will cover the dance routines and the other, the drumming techniques. There will be another video file with a combination of both techniques. In each video file, the instructor will give a detailed explanation and a step-by-step demonstration of either dance routines or drumming patterns. The focus will be on posture, technique, execution, and dance aesthetics. Also, each instructional video will have a backing track/play-along specific to the particular dance step or drumming part under study. The play-along will serve as the sound source from which students practise their dance routines and drumming.

Furthermore, audio-files will include drum patterns. Instructional notes and notation will also be made available in PDF format. These sources will

[7] https://www.youtube.com/watch?v=IyHQJzgDCgg

serve as a reference to assist the instruction during the live-streamed classes. Instructional videos/audios will include:

- Video 1: Introduction

This video introduces the course, its aims and objectives as well as the outline – a brief note on the music tradition, the instructional videos and other support resources.

Dance Instruction Video (six instructional videos)
Dance sequences in these videos have six different instructional units.

- Video 2: Step #1 – *Kutchatcha*/stamping
- Video 3: Step #2 – *Kutchatcha* variation
- Video 4: Step #3 – *Mungenu* (Stop & Go)
- Video 5: Step #4 – *Kudana* (The call)
- Video 6: Step #5 – *Kukavata*
- Video 7: Step #6 – *Gwinya*

Each dance component is broken down and explained, and sequentially demonstrated. Videos will be labelled and coded for easy access with a paper edit, which indicates key dance routines, drum patterns and improvisation for reference. An additional video link will provide students with an opportunity to experience *ngalanga* from the culture bearer's perspectives.

Drumming Instruction videos (dance accompaniment)
This set of videos and audios introduces various layers of drumming techniques. The instructor introduces the various names of the drums, its role in the ensemble and playing techniques before demonstrating.

- Video1/Audio 1: Pattern #1 – to accompany *Kutchatcha*)
- Video2/Audio 2: Pattern #2 – to accompany *Kutchatcha* variation)
- Video3/Audio 3: Pattern #3 – to accompany *Mungenu*)
- Video4/Audio 4: Pattern #4 – The call
- Video5/Audio 5: Pattern #5 (*Kukavata*/*Makhara*)
- Video6/Audio 6: Pattern #6 (*Gwinya*)

Online classes will be mediated interchangeably between Moodle, Zoom, WhatsApp and E-mail. To ensure that students access learning, and mindful of the fact that accessing and manoeuvring technologies can be challenging and can somehow expose inequalities (Heyang & Martin 2020:3), the course will employ technologies/platforms that are accessible and user friendly. Live streaming of classes will follow the UKZN's timetable; however, where necessary, rescheduled, following consultation through the online learning WhatsApp group to be created (before live streaming). Students will learn the same aspects of music set in the instructional resources. For record purposes, WhatsApp sessions will be screen-shot or recorded. Feedback will be through the same identified online channels. Through this group, various logistics of the remote teaching will be deliberated and discussed.

As this an ensemble class, the challenge is to find alternatives that can capture the groupwork while in a context of social distancing. Although Zoom provides a virtual platform to bring many people together in a virtual space, issues with connectivity, bandwidth, delays in receptivity and data consumption make it a challenge to engage a class on African music and dance ensemble effectively. Alternatively, the video collage app provides a way to organize multiple, yet synchronized demonstration of various orchestrated aspects of performance. For instance, it is easy to embed four frames in a video, such that the instructor demonstrates the timeline pattern in synchrony with the primary *kutchatcha* step, accompanied by the lead drum and the *tshikhulu* bass parts.[8] Students can use this approach to package their assignments by collaborating in duets, trios or quartets to exchange recorded tasks, each performing a specific task, and produce an edited video collage to submit for grading. This, however, does not replace the essence of ensemble work.

Assessments in this mode of instruction will reflect the new normal; however, examine the essence of the pedagogy. Students will record themselves performing the prescribed weekly tasks and submit for evaluation, which will form part of the continuous assessment. The assessment will focus on progress on repertoire, dance and drumming techniques as well as choreography. Assessment will be conducted either via Zoom or WhatsApp conference call. The other option will require of students to pre-record themselves and submit the recordings on Moodle within a set timeframe. The final assessment will encompass the component performance; however,

[8] https://www.youtube.com/watch?v=LA04H81yba4

framed in two possibilities; the first option – a live performance via live-streaming on a platform either Zoom, WhatsApp or Facebook. The assessment grading will follow – Midterm (30%), Live-streaming show (10%), and End-of-semester (10%), with a total semester mark of 50%.

The transition process from contact to online modes of instruction is a complex one (Gold 2001: 35), as it involves specialized training in the technical aspects of delivering quality educational materials in an online environment, and how to foster knowledge acquisition within this new environment. Teaching African dance and drumming in a confinement context, within a limited space, with limited resources while trying to make sense of the new normal and the socio-political and economic dilemmas makes it even more impractical. Although UKZN made provisions for students and staff to access the internet, issues of connectivity, bandwidth become a challenge. Teaching a dance-drumming tradition rich in content becomes challenging virtually, especially in a limited space with sound disruptions delays which takes away the aesthetics of the style, impacts the teaching mechanism and collective engagement. Thus, having the course pre-recorded and packaged in instructional videos minimizes these challenges; however, investing in professional video production ought to ensure a successful synchronous module.

Conclusion: Program Delivery and Assessment in the Context of Institutional Closures

In the two examples above, the Ghanaian palmwine guitar tradition taught as individual instruction and the *ngalanga* dance drumming tradition from Mozambique taught as an ensemble class, one can see a carefully laid out pathway towards the program delivery and assessment. Most of the innovations happen during the program delivery, particularly in the ensemble class, where things need to occur with some synchrony. In the case of individual instruction, other than delays in transmission in the visual media available, there is not a significant departure from the norm. What helps in both cases is the opportunity students have to play difficult parts of pieces and continue to rehearse with the assistance of the recorded examples, and that way increase their proficiency and clean up their articulation. They do not also have that possibility in contact instruction that is a short 45 minutes per week.

Similarly, with assessment, the assessment instrument used does not

deviate much from the norm, as the examining panel views the presentation and scores the marking sheet. Following the individual scoring, the panel can have a Zoom or WhatsApp meeting to discuss their marks, and the necessary moderation can happen per usual. Assessment of the ensemble work provides the most significant challenges. Concepts need to be isolated, in not always natural ways, and this interrupts the flow and creative momentum – the natural build-up and ebb and flow that characterises live performance. Absence of an audience affects a live performance of many genres of African music and dance to come further alive with their participation – ululation, cheers, and claps. Also, ensemble members do not feed off one another's creativity and spontaneity in performance. What falls away is the spontaneity, creative outbursts, the dialogue between drummers and dancers that build up to points where each peaks with some virtuoso interplay. Even in the solo instrumental tuition, the energy of in-person contact teaching and the rapport that creates a positive dynamic environment are missing in the online and remote education. Teachers cannot lean forward towards their learners, or help place their finger on the correct string, or gently correct the posture, as the screen stands in the way. Also, one finds that the lesson moves along a lot slower than with in-person contact.

However, with the view that institutional closures will be a long-term reality, and indeed the new normal, teachers and students warm up to remote and online teaching. Soon indeed, various technological advances will enhance things, particularly the ensemble teaching, in which case, a few months ahead, we should find ourselves closer to reaching a level of creativity that we can all be happier with. In the future, we can utilize broader social media, including Google Hangouts, to explore other options further. With faster internet speed, the quality of online video engagement will improve immensely, and the current delay experienced when performing on platforms such as Zoom will fall away. The new audience for concerts will now be these online platforms too, and some of these pedagogical experiments can be included on YouTube, a channel set up mainly for these genres studied, not as a complete well-rehearsed performance, but as educational tools to aid learning. With more of a social media presence, these materials will have an even broader reach and will be valuable pedagogical materials available to populations around the globe. In such a setting, teaching can open chat rooms and blogs to explain creative pathways further around challenging passages and to engage with questions and discussions with others learning the traditions.

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Preparedness of Staff and Students in Utilising Learning Management Systems in Health Sciences as Crisis Intervention during Lockdown

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Abstract

With the recent emergence of COVID-19 and the associated lack of adequate information on the epidemiology, therapeutic management or natural history of COVID-19, Higher Education Institutions (HEIs) around the globe have

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experienced profound structural changes in teaching and learning. It is important for academics and researchers at Higher Education Institutions to plan and apply appropriate self-directed learning and teaching principles to ensure effective teaching and learning outcomes. This demands a strong sense of responsibility and accountability, not only from a student perspective, but more importantly, from the perspective of the learning institution. South African Higher Education institutions have been equally affected, creating a strong sense of responsibility and accountability not only from a student perspective, but more importantly, from the perspective of the learning institution. The dynamics of learning and teaching environment, together with rapid changes in science and technology, have important implications for Higher Education and lecturers and students essential to be prepared to cope with the increasing complexity of Learning Management Systems (LMS). Learning institutions are now at the forefront of developing the skills of enquiry which encourages self-directedness and life-long learning through robust LMS, such as computer applications for the management, certification, tracing, broadcasting, and conveyance of informative online courses, tutorial plans, or education and personality development programs. In this chapter, we deliberate on the preparedness, problematisations and prospects for new insights and responses to infectious diseases, especially COVID-19, that confront the Health sciences curriculum within undergraduate and post-graduate programmes.

Keywords: Academic Staff, COVID19, Curriculum, Higher education, Structural change, South Africa

Introduction

Globally, economists and policymakers have bowed to the 1918 Spanish flu for management on the COVID-19 crisis, and some have been applauded by the example of its strong post-pandemic economic recovery. Representatives have also been persuaded to use lockdowns, school closures and HEI (called non-pharmaceutical interventions, or NPIs) in research roles, demonstrating that 1918's NPIs saved lives while assisting the subsequent economic recovery (Asquith 2020). Furthermore, all academic institutions around the world are grappling with the impact of the COVID-19 lockdown on their educational systems, and due to the emergence of COVID-19 and associated lack of

adequate information on the epidemiology, therapeutic management or natural history of COVID-19, and profound structural changes in teaching and learning have been experienced. It is important for academics and researchers at Higher Education Institutions to plan and apply appropriate self-directed learning and teaching principles to ensure effective teaching and learning outcomes. This demands a strong sense of responsibility and accountability, not only from a student perspective, but more importantly, from the perspective of the learning institution. While international and national government structures try to consolidate recovery plans in a proposition to save the calendar year, HEIs are responding to the lockdown and restrictions by driving digital learning and e-learning as ways of dealing with this crisis. However, in the 21st century and with the advent of the fourth industrial revolution (4IR), it is hard to imagine the turmoil within teaching and learning brought on by the unprecedented corona virus outbreak. Whilst, the 4th industrial revolution (4IR) has emerged, especially in the higher education sector bringing radical changes to the offering of its learning and teaching, (Manyonga & Ngubane-Mokiwa 2019),universities will still need to provide the right kind of resources and the right kind of people to drive the educational technology initiatives. This will also entail an understanding of how the discourse of Learning Management Systems (LMS) has influences curricula and pedagogy of the learning institution. There is certainly anxiety about the interaction between these technological developments that replaces face-to-face classroom interaction, which has been raised by policy-makers, academics and students alike. These and other concerns then raise the following question, 'How are LMS conceptualised particularly in terms of HEI curriculum and delivery?'

The new technologies utilised in tertiary education have increased access and improved teaching efficiency and, more importantly, South African tertiary institutions have responded to the shifting societal and financial challenges in the last two decades, embracing the usage of instructional and integrated advanced information technologies as a means to enhance student learning and performance. Modern LMS are gaining popularity worldwide and many colleges and universities are moving towards a more technological mode of delivering education and training. Advances in networking technologies, multimedia, and the internet can have a substantial influence on instruction and teaching patterns in higher education. It should also be noted that critical thinking can and should be applied to all knowledge systems, whether it be discipline, transdisciplinary, interdisciplinary or multidiscipline-based and

often better knowledge is produced when complementarity is regarded as a useful approach (Amin & Dhunpath 2019). Given our contributions to academic teaching at a higher education institute, in this chapter, we address complications faced by staff and learners that are simple to operate on a daily basis and to intensify the alertness among educationalists on how old-fashioned, face-to-face learning environment can be transformed using advanced information technology (IT) tools to improve the value of education and learners' engagement in traditional class and innovative online methods. Ethical issues during COVID 19 are also deliberated.

Current Trends in Higher Education in South Africa

Traditionally, there have been two approaches to e-Learning in HEIs, namely distance learning utilised for learners located in remote places from the essential site, and computer-aided teaching, which involves the use of material mainly from computers (Parkes, Stein & Reading 2015). Furthermore, the same study notes that the use of internet technologies among staff and learners leads to an improvement of the presentation and acquaintance of computer-based learning or e-Learning. The use of online platforms plays a very dynamic role in the lives of learners and staff, and this has increased the attention of numerous instructive knowledge experts. Consequently, e-Learning has been known as an unavoidable tool that has emerged after information technology, and has been enduring to be combined into many university learning management programmes.

Digital knowledge is bieng promoted at HEIs, convincing education-alists to challenge existing conventional methods of teaching and learning in the higher education sector and the use of electronic learning environments has already been implemented at many educational institutions across the world over the last three decades, seeing a rapid advancement in computer and communications technology (Larsen 2012: 1). Although Kiviniemi (2014: 47) notes that the use of information technology and e-Learning platforms in HEIs has sustained to increase into novel innovative practices in teaching and learning, Moore, Dickson-Deane and Galyen (2011: 129-135) argue that online digital education has well exceeded the initial methods of distance education teaching approaches, which were frequently based on communication type courses, video conferencing and educational programmes broadcasted via television. Likewise, blended learning, which is the

combination of face-to-face instructions with the help of technology-based learning, is gaining popularity among academics (Namyssova *et al.* 2019). Notably, there is continuous evolvement of the higher education setting into a technologically rich environment to align itself with a technologically minded generation. In recent times, this has been evidenced by HEIs' LMS subsequent swift in technical novelty that has enabled merging between traditional face-to-face and technologically driven environments (Bowyer & Chambers 2017). Some of the methods of teaching and learning that are commonly used by HEIs throughout South Africa and ones that encourage larger audiences are Microsoft TEAMS, Skype and Zoom webinars (Ayandiran 2016; Bowyer & Chambers 2017).

Technology-driven Learning in Higher Education

Teaching and learning in HEIs are shifting dramatically and the scene is constantly evolving (Fig. 1). Planning, teaching and learning during the time of lockdown and developing strategies and tools that allow the staff and students is imperative to offer the effective educational experiences, which can be achieved with the help of information technology.

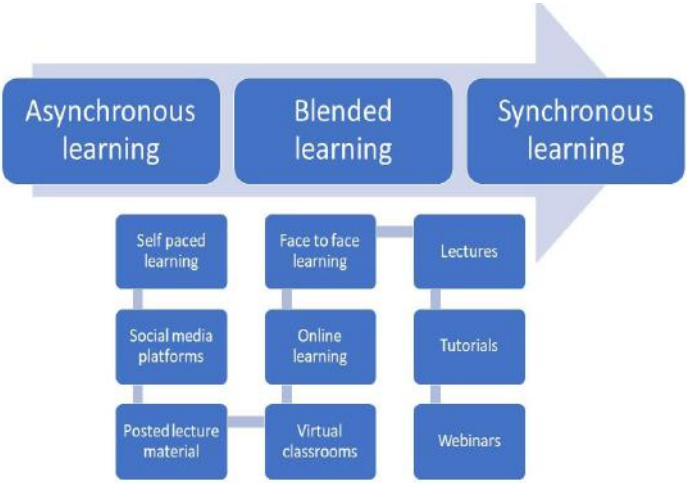

Figure 1. Different learning environments for learning

Apart from the ubiquity of digital technologies, many issues are responsible for this revolution, such as an increasingly varied student population, great demands on a skilled workforce and the need for more flexible learning environments, because of lifelong learning and pandemics like COVID 19 recently. In South Africa and globally, the higher education ecosystem is constantly changing and growing, driven by the influx of students from emerging economies such as China and India (OECD 2018). The intervention of online or e-Learning platforms has gained in popularity in the last two decades as an effective approach to accommodating an increasingly diverse student population and enriching the learning environment, with the incorporation of online teaching resources (Alammary, Sheard & Carbone 2014)

Blended Approach

Why We Need a Blended Approach

Technology brings more opportunities and challenges to teaching and learning. With technology being used from many years, traditional learning through face-to-face is being shifted to many other means of supporting knowledge delivery and innovative learning environment like blended learning, which is the combination of face-to-face instruction with the help of technology-based learning (Larsen 2012). Blended learning has substituted a great percentage of the outdated direct teaching environments (Veerasamy & Nabila 2020).

The benefits of Blended learning (BL) are as follows:

1. Assessment using BL has shown in many situations that is it more advantageous than direct or online instruction.
2. Students are more independent and autonomous in their learning, as they can learn and study at their own pace.
3. It is more preferable and effective, because it involves students in active learning, peer communication, processing the information gained through self-reflection and ‘checking their understanding, organizing their knowledge, and making connections with what they already know” (Garrison & Vaughan 2008).

During COVID 19 lockdown, blended learning is more beneficial because of the following reasons:

1. Assessment using BL has shown in many situations that it is are more advantageous than direct or online instruction.
2. It is combination of both direct and online learning.
3. Essentially it helps to establish learner engagement.
4. It reconstructs and substitutes traditional lesson interaction times.

Lecturer Preparedness during Lockdown

An LMS readiness evaluation is central to any HEIs, as this permits these organizations to generate strategies that will empower them to devise their goal line effectively and competently (Chaubey & Bhattacharya 2015). The questions that often surface are:

1. Are HEIs able to do engage successfully in LMS in the face of a crisis?
2. If we are able to engage, how is it possible to achieve our goal?
3. How can we measure and evaluate the implementation of LMS?

According to Verster, Collett and Van den Berg (2019), who explored multimodal interdisciplinary enhancement for the higher education curriculum, it was noted that lecturers in HEIs should:

1. Have the courage to explore and find their voices, rather than just drawing on traditional academic language and conventions.
2. Work collaboratively and tap into the resourcefulness of the collective, rather than as individuals.
3. Recognize the influences and value of engaging with multimodalities to find new ways of knowing and being.
4. Trust more in the process of attentive engagement with a depth of learning, rather than a superficial covering of content.

Lopes (2014) and Adzharuddin & Ling (2013), add that it is crucial to the accomplishment in altered models of digital learning and instruction for the lecturer or instructor to enable dynamic involvement and teamwork by learners in problem resolving and familiarity creation Furthermore, he agrees and further states that digitally based education approaches help to progress the educational process and report difficulties especially for academics, which are often connected to weak cooperative partnerships, deteriorating educational values, increasing budgets and augmented scholar statistics.

A study that explored LMS in HEIs has found that when schemes are presented into more advanced societies, users should not experience problems such as low technical literacy, high capacities, manifold dialects and institutional restraints like deprived technical backing, structure and internet admittance. The study further states that for online teaching and learning to be truly inclusive and be a success in developing economies, we need to consider these contextual issues (Chaubey & Bhattacharya 2015). Especially crisis and catastrophe can happen any time; when they occur it is necessary that all educational institutions are prepared to handle it effectively, which can be done by preparing online videos for the content, accessing online resources and moving lectures to virtual teaching and learning based on IT tools.

Notable information technology (IT)-related tools which are advantageous for students and staff are indicated in Table 1.

Table 1. Information technology associated tools used in digital education

Tool	Purpose	Web link
MS-Teams	For collaborating and communication	https://products.office.com/en-US/microsoft-teams/group-chat-software
Moodle	For uploading documents, communicating, assignments	https://git.in.moodle.com/moodle/moodle.git
Screen castify	For creating video based on the content	https://www.screencastify.com/

OneDrive	For sharing information and storing (Like projects and assessments)	https://onedrive.live.com/about/en-za/signin/
Google classroom	Aims to simplify creating, distributing, and grading assignments in a paperless way	https://classroom.google.com/u/0/h
Zoom	Video conferencing, webinars	https://www.zoom

Student Preparedness

Within education debates, transformation in educational institutions has often been understood from an academic standpoint of inclusion, to transform their cultures to increase access, participation and academic achievement of students. Chiwandire (2019) notes that employing the principle of 'multiple means of engagement' is important in sensitising lecturers to consider that students vary in the behaviours in which they can be involved or inspired to learn, requiring of lecturers to provide multiple ways for their scholars to improve and become involved in the knowledge process.

The following three factors are vital for student preparedness.

Psychological Readiness

Psychological preparedness means captivating the right attitude for the effective application of any digital learning programme. Chaubey and Bhattacharya (2015) report that perspectives to digital learning, such as the way in which a learner observes, trusts, details and visualizes the e-Learning programme. The study resolved that efficacious employment of any LMS programme within an institution means having the right resources. Psychological readiness is well-defined by Chapnick (2000) as a type of readiness, which places emphasis on a person's ability and this can affect the

consequence of the e-Learning creativity. This type of willingness for students is observed as one of the most significant contributing reasons that could influence the employment process.

Technological Willingness

Technological readiness/preparedness means that participants possess the right technological skills to know how to use LMS. Findings from Chaubey and Bhattacharya (2015) demonstrate that most students come to tertiary institutions without previous knowledge of technology or computer skills and since technology is evolving all the time, it is vital that HEI prepares students adequately for a multimedia online platform, which will allow lecturers to engage with students.

Equipment Readiness

The fact that students demonstrate success in a conventional education and training classroom may not be an adequate predictor of success in an e-Learning classroom. Chapnick (2000) noted that, whilst digitally based education is appreciated by undergraduate learners, they lack the funds and equipment. It is therefore suggested that equipment be made accessible for this type of education in order to safeguard its accomplishment.

LMS Intervention Strategies during Lockdown

With the enforcement of the international and national lockdown periods of countries and states, universities have had no choice but to begin the process of planning online courses for their students. This huge adjustment to the teaching and learning dynamics of the learning environment has been a great challenge not only for lecturers and students, but also for the staff providing technical and didactic support at HEIs. One such unit working behind the scenes is the development tasked with assisting with ongoing training and learning support for lecturers and student with LMS.

There have been inherent challenges with the digital platform, of learning and teaching and university teaching and learning task teams are still busy exploring alternative solutions to ensure no student is left behind. Universities have looked to specialists in e-Learning and educational technology, and devised plans to provide ongoing workshops on helping lecturers to develop online courses to ensure continuity in learning. This

mapping out of educational tools may help HEIs deliver online learning, considering the capabilities different institutions have and the devices students may have access to. Whilst some HEIs have guaranteed that their organization, learning funds and communicating systems are associated with a transportable educational environment, some other less advantaged HEIs are still facing challenges to overcome the infrastructure issues.

Surveys conducted across South African HEIs have projected that amongst 10% and 15% of scholars do not have access to proper data (Bowyer & Chambers 2017). Therefore, universities have put in additional measures to report the tasks confronted by students, such as the lack of access to laptops and data. A contingency plan comprises providing learners with laptops. Some universities are considering beginning mobile computing, which will allow students to have access to informative data. These mobile devices will be loaded with educational content and pre-loaded with the required learning tools before being delivered via the South African Post Office to students who need it. Finalisation of agreements between HEIs with major telecommunications service providers such as Telkom, MTN, Vodacom and Cell C at zero rate its library and LMS from 15 April 2020 will be effective and this will assist learners to access data.

Ethics in Teaching and Learning: Are we Prepared?

In line with the national lockdown put in place by the government at midnight on Thursday 26 March 2020 to stop the spread of COVID-19, all South African higher education institutions adhered to the restrictions of the lockdown period. This unique situation raised a number of concerns and uncertainties for the continuation and delivery of learning to students. Universities have an ethical obligation towards its students to provide them with the necessary systems of support to cope and pass their qualification. Through this viewpoint, digital learning platforms have become a vital method or alternative to learning distribution owing to the landscape of the education setting, to reach its audiences. During the last two decades, online education has become very popular. Due to the upsurge in its usage, distinct interest has grown regarding its ethical issues of online learning (Toprak *et al.* 2010). According to Bowden and Smythe (2008:19), ethical behaviour is communally and ethically tolerable, which is correspondent with right activities of the society. In other words, ethics is a chaperone to making decisions between right and wrong.

Many universities do not have an online system of support in place and it will take a while to develop such a system. Also, instructional ethics needs granting educational chances to everyone on an equal basis; ignoring nationality, gender, ideological differences or mental/physical infirmities. Ethics in digital learning, taking into consideration the number and diversity of students in these surroundings demands a policy harmonizing different prospects and studying how the users perceive the process. It is mainly the task of the HEIs to create and nurse the related outlines. This is critical for both the successful functioning of the system and meeting the outlooks of the users.

Vast literature available endorses that the ethical considerations in digital learning are based upon and include communal and political influence, cultural diversity, prejudice, geographical diversity, learner diversity, digital divide, etiquette and legal issues (Khan 2005). As reputes, learner range and the e-Learning environment must answer to different learning styles. As well individual differences, special needs of the learners such as disabilities also need to be taken into attention. Bearing in mind that diverse learners have changed learning needs, the instructor, course designer and moderators must be sensitive and innovative about involving them in the e-Learning environments.

The universities have to provide the necessary systems of support such as access to internet in the form of data, taking into consideration the network connectivity in the student's residential area. Aslani (2013) contends that it is important that students continue with their studies remotely wherever possible, using the many remote tools available and for lecturers and facilitators to provide them with good support. However, access to both laptops and data is a challenge for many students. Work is currently being done at a national level at the Durban University of Technology (DUT) to provide students with access to both laptops and data, which is a challenge for many. Work is currently also being done at a national level with different companies to provide students with access to South African-hosted websites, including all educational sites, for as long as they are unable to attend campus. However, there is still a lot of work to be done.

Besides Toprak *et al.* (2010) other studies also suggest that scholars desire to use novel technologies that offer improved instructional opportunities, but it is a fact that all learners may not have the essential technologies. This is related with the digital gap that underlines the status of

information accessibility in the e-Learning sphere. Khan (2005, quoted in Toprak *et al.* 2010:83), outlines the digital divide as the gap between those who have access to the Internet and other information technologies and those who do not. The motives may be economic, social, physical or topographical. Connected to the economic difficulties, institutions may support students to have better laptops and access to data. Some campaigns in association with technology companies that provide computer systems more economically can be utilised. In this way, the students have better advantages in accessing the latest information related to his course content.

Universities must deliver education that is impartial to all students, regardless of their socio-economic backgrounds. Toprak *et al.*'s (2010:85) study found that investigations should be conducted related with learning styles, hardware ownership, physical disabilities of students. Students have their own styles for expressly gathering and organising material for their education purposes, and they have diverse learning needs due to their dissimilar educational and societal backgrounds. This is why teachers, course designers, and discussion moderators must be sensitive about the students' learning behaviour and be innovative about teaching methodologies.

Quality standards should not be compromised during the lockdown period. Procedures must be in place to ensure the integrity of the assessment and the qualification. Almseidein and Klaif.Mahasneh (2020:219) state that HEIs should have e-Learning policies, guidelines on especially legal issues like preventive privacy, plagiarism and copyright issues. The students and instructors' opinions are different about the regulations for cheating/ plagiarism. Some requirements are necessary for the more effective and efficient use of online courses. However, students' involvement in the online courses should not be taken into consideration in student assessment. Aslani (2013:215) concurs by stating that teachers who work in electronic environments encounter great challenges in terms of providing electronic content. It is not only the books and learning facilities that are important. Providing a reliable network accompanied with effective software programs is vital, while network security and ethical issues come to the foreground. This COVID 19 pandemic has brought to light that new learning methods are likely to continue to develop and will continue to change aspects of learning delivery methods considerably. It should also be expected that ethical issues will also arise continually. Preparations should be made to mitigate the effects of ethical issues before they appear, not after.

Conclusion

Income development is a central attention in the design digital environment. This study deliberates the benefits and challenges related to learning management systems at DUT, South Africa. The changing context of our delivery of programmes requires that we carefully consider revising our original curriculum plans without comprising the outcomes of our programmes. As we change from direct to online modes for learning and teaching, we are expected to make decisions about the planned curriculum and how we deliver this within the confines imposed on us by the global crisis. However, online education is permeating higher education, convincing educators to challenge existing assumptions of teaching, learning in higher education, and explore a combination of instructional methods available to them. Even though students may display a positive defiance towards e-Learning, educational technology trends are advancing endlessly with recent training and learning needs. Overall, HEIs have to institute additional measures to address the challenges faced by learners and staff, such as the dearth of access to devices and data while working remotely from home.

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Blending Digital and Technological Skills with Traditional Commerce Education Knowledge in Preparation for the 4IR Classroom: The COVID-19 Catalyst

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Abstract

In an era characterised by unprecedented technological developments in all spheres of life, the current 4th Industrial Revolution (4IR) requires a workforce that can blend digital and technological skills with traditional subject matter expertise. These individuals are also expected to possess other human skills including problem solving, creativity and critical thinking. Higher education institutions are tasked with the responsibility of producing such graduates for the workforce. Considering the current wave of global lockdown in almost all spheres of life arising from the COVID-19 pandemic, e-Learning is a viable option for education. The University of KwaZulu-Natal (UKZN) School of Education embraces this idea and provides an enabling environment to support virtual learning. However, the extent to which the teacher-education programme is developing student teachers via e-Learning platforms who can thrive in the 4IR digitized school classroom is not apparently clear. The emergence of the COVID-19 pandemic has created a catalyst for academics to test this development. Using the Commerce Education discipline in the School of Education at UKZN as a case study, this chapter draws on the Technological, Pedagogical and Content Knowledge (TPACK) model to determine the extent to which academics have blended digital and technological skills with traditional Commerce Education knowledge. Document analysis was

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performed on the revised module templates for the Accounting Education 113 and Economic Management Science (EMS) 111 modules that were prepared for emergency remote learning during the lockdown period. The findings make a case for further empirical research to focus on the lived pedagogical experiences of both academics and students who undertook such modules via the e-learning platform. It is envisaged that this chapter will make timeous theoretical contributions in the light of the COVID-19 pandemic that has catalysed the need to prepare Commerce Education academics and students for the current 4IR classrooms during and after the pandemic from a technological, pedagogical and traditional knowledge perspective.

Keywords: COVID-19 pandemic, 4th industrial revolution classroom, digital and technological skills, traditional Commerce Education knowledge, e-Learning

Introduction and Background

In the wake of the 4th Industrial Revolution (4IR), the world is currently being steered into a wave of digital revolution powered by rapidly advancing technologies that are redefining the way things are done in all spheres of life. In this era, it is believed that the critical success factor is not necessarily the physical or financial resource of the entity; rather, it is its talent pool (Schwab 2015) of humans that are the drivers of the impending change through their creativity and ideas (Gleason 2018). As such, employers are seeking graduates who are ready to contribute in steering their businesses to success in the ever-competitive globalised work environment (Susanti *et al.* 2020; Lestari & Santoso 2019; PWC 2019). The onus is on the Higher Education Institution (HEIs) to produce graduates with the required knowledge, skills and attitudes (Jananian 2020; Yuhasriati *et al.* 2020; Lestari & Santoso 2019; Oliveri & Markle 2017; Webber-Youngman 2017) who are immediately employable (Gleason 2018). The World Economic Forum (WEF) holds that the 4IR workforce 'are those who can blend digital and STEM (Science, Technology, Engineering and Mathematics) skills with traditional subject expertise' (2017: 9). Skills expected of the 2020 workforce includes critical thinking, creativity and complex problem solving, amongst others (Jananian 2020; PWC 2019; Webber-Youngman 2017; WEF 2016). As such, HEIs are expected to

embrace the digital age to stay relevant and simultaneously blend the traditional knowledge required of each disciplinary domain of the university-(PWC 2019).

From its strategic plan, UKZN, in its commitment to excellence has undertaken to offer world-class infrastructure to support its teaching and learning activities, among others (UKZN 2017). This strategic goal for excellence underpins the University's teaching and learning policy (Vithal 2013). Principle 8 of the policy emphasises the institution's support for 'multiple modes of teaching and learning, including experiential and on-line/e-Learning' (Vithal 2013:5). In the School of Education, existing lecture facilities have been upgraded to incorporate modern audio/visual equipment; huge lecture theatres with state-of-the-art facilities for teaching and learning have been commissioned; the local area network has been expanded; and all first-year students who have joined the institution since 2017/18 have been issued with individual laptops. Faced with the global lockdown arising from the COVID-19 pandemic, these state-of-the-art facilities can no longer be accessed, compelling universities to deliver their programmes online. Academics at UKZN, including those in Commerce Education, are thus expected to harness the available technology and digital infrastructure in the pedagogical process to enhance learning via e-learning platforms (Lestari & Santoso 2019; Hussin 2018). This move is in keeping with preparing their students to thrive as teachers in the 4IR secondary school classroom upon graduation. However, the extent to which the Commerce teacher-education programme has been developing student teachers who can thrive in the 21st century/4IR digitized classroom using e-learning platforms is not clear. The emergence of the COVID-19 pandemic and the mandatory move to online teaching have served to catalyse this process. This chapter therefore seeks to explore how Commerce academics in the School of Education at UKZN responded to the COVID-19 pandemic in their preparation for emergency remote and online learning.

Guided by the Technological, Pedagogical and Content Knowledge model (TPACK), document analysis was performed on two revised module templates (Accounting Education 113 and EMS 111) with a view to determining the extent to which digital and technological skills were blended with traditional Commerce Education knowledge to prepare undergraduate students for the 4IR secondary school classroom. The chapter further makes a case that the COVID-19 pandemic has catalysed this process and therefore

creates an opportunity to determine whether academics themselves are ready to deliver a programme that blends digital and technological skills with traditional knowledge in order to prepare their graduates for the 4IR classroom.

Response to 4IR

Like many other countries in the world, South Africa embraces the 4IR with plans to transform into a digital society by 2030, powered by appropriate infrastructure and a promise of universal access to affordable devices by all South Africans irrespective of their socio-economic background (Department of Telecommunications and Postal Services [DTPS] 2017). The South African President commissioned a task team in 2018 to formulate an integrated strategic plan to respond to and fully harness the potential of the technological advances afforded by the 4IR by 2030 (Ramaphosa 2020). In order to provide the talent pool to drive the 4IR, reskilling/upskilling is deemed imperative. There is a need to modernize the education system, because many students may find themselves unemployed if the education system continues with traditional methods of instructive rote learning (Lekhanya 2019). This calls for HEIs to turn from the old ways of delivering education and embrace the change and innovation that comes with the 4IR to ensure survival (Mezied 2016). In the 2020 State of the Nation Address debate, the Minister for Higher Education and Training, Minister Blade Nzimande, reiterated the commitment of the government to provide all HEIs with 'high-speed broadband interconnectivity' by 2021 in readiness for 4IR. Also included in his speech is the planned development of a National Open Learning system aimed at providing top quality learning resources via online platforms.

In an article published in the African News Agency, The Minister of Basic Education, Minister Angie Motshekha, also confirmed her Department's readiness to tackle the 4IR evidenced by curriculum review to incorporate robotics and coding in addition to the gradual rollout of ICT infrastructure and internet connectivity at schools (Ndledle 2019). In other words, the 4IR classroom is technologically and digitally resourced, not only to aid learning, but to instil digital and technological competences needed for learners to live and excel in their future workspace. While acknowledging the fact that many classrooms in present-day South Africa trail behind the ideal 4IR classroom, the government is advancing towards the 4IR, and so should teacher education.

HEIs therefore have a responsibility to prepare competent teachers who can 'adapt to the changing trend and new knowledge and skills based on the cyber-physical system as part of everyone's life to face the future generation Z students through the instructional subject' (Syaddad 2019:1166). For example, Accounting students are expected to be technologically literate so that they can at least use accounting software to process transactions, prepare financial statements and perform basic simulations (Lestari & Santoso 2019). With digital literacy, they should be able to access data from various sources on different teaching strategies that can be implemented in the classroom with ease. To enhance technological literacy, the programme of instruction may be modified to incorporate an understanding of the latest software/technology related to Accounting; while digital literacy can be enhanced by providing students with internet facilities and the instruction modified to make room for students to access necessary information from the internet (Lestari & Santoso 2019). At the same time, the students are required to gain the traditional disciplinary knowledge of Accounting.

Traditional Commerce Education Knowledge

Traditional knowledge in a school setting is academic knowledge. Knowledge is acquired in an institution of learning. It is domain specific, comprising factual, conceptual, procedural and metacognitive knowledge (Anderson *et al.* 2001). These comprise terms, concepts, procedures and ways of thinking that the students must become familiar with in their quest for expertise in any discipline (Anderson *et al.* 2001). In other words, traditional knowledge in any field consists of the disciplinary knowledge, skills, values and other behaviours that the students must acquire in order to communicate, solve problems and thrive as graduates of that discipline (Anderson *et al.* 2001).

The School of Education in UKZN aims for an education that is of high quality that contributes to life-long learning (School of Education website n.d.). As a subset of the Social Science cluster, the Commerce Education Discipline (CED) undergraduate programme is tasked with educating students to teach Accounting, Business Studies and Economics Management Sciences (EMS) in South African secondary schools. Each of the three arms of the CED provides both method modules and core modules (disciplinary knowledge, skills and values) to equip students with the relevant knowledge and skills to teach secondary school learners. The method modules aim to develop students'

teaching skills as they apply various theories and approaches to the respective traditional disciplinary content.

The content of the core modules is derived mainly from the Curriculum and Assessment Policy Statements (CAPS) for the related secondary school subjects. The traditional or academic knowledge specified in the CAPS document for Accounting includes Accounting Concepts, Generally Accepted Accounting Practices (GAAP), Bookkeeping, Accounting Equation, Final Accounts and Financial Statements, Salaries and wages and other topics (Department of Basic Education [DBE] 2011). In Business studies, students are expected to acquire traditional knowledge related to the following topics: Business sectors, Entrepreneurship, Business plan, Creative thinking and problem solving, Social Responsibility, Business Functions and other topics. EMS, which broadly comprises financial literacy, entrepreneurship and the economy includes the following traditional knowledge: Money, Economic systems, Budgets, Bookkeeping, and The Entrepreneur, amongst others (DBE 2011). While Accounting and Business studies are taught in Grades 10 to 12, EMS is taught to Grade 7 to 9 learners. As seen from the similarity of the topics, EMS is aimed at providing the foundational knowledge on which Accounting and Business studies' traditional content knowledge is premised. Future teachers are expected to acquire traditional content knowledge, skills and values relating to these topics to teach in the field of Commerce at secondary schools.

Following the revision of the Bachelor of Education (BEd) curriculum in the School of Education, the Business Management curriculum is gradually being phased out, such that first-year students who are secondary school matriculants from the previous year can now opt for the module. Currently these first-year commerce majors (students) are mandated to study Accounting and EMS. As such, this chapter will focus on the core modules from the two disciplines, since the method modules are not available to students in their first year of study.

Accounting Education 113 aims to equip students with knowledge and skills to collate, categorise and communicate financial data specifically for the sole trader (UKZN School of Education, 2020). On completion of the module, students are expected to have acquired knowledge and skills necessary for the preparation of journals, ledger accounts, reconciliation of accounts, financial statements and the interpretation of accounts and financial statements guided by Accounting principles. Assessments in coursework comprise (50%) and exams (50%). Originally, the former is made up of online quizzes (20%) from

the Oxford learning platform – Dashboard allied to the prescribed textbook for the module and two written tests (40% each). Teaching and learning are mainly done via discussions guided by PowerPoint slides, and videos in the lecture theatre. Formative tasks from textbooks and other tutorials are used to support and consolidate learning. More often than not, examples and class activities are done on the board in lecture venues.

The focus of the first-year EMS 111 module is on the entrepreneurship component of the CAPS document. Students are expected to acquire introductory knowledge and skills relating to entrepreneurship including the qualities of an entrepreneur, business acquisition process, business plan, franchising in South Africa, factors of production and savings/investment opportunities (UKZN School of Education, 2020). Similar to the Accounting module, the planned mode of delivery was contact-based, comprising lectures guided by PowerPoint slides and tutorials. Assessments comprised assignments and class tests making up 50%, and examinations making up 50%.

With the COVID-19 Pandemic looming worldwide, the module templates have been revised because place-based learning can no longer hold. While the course objectives and traditional disciplinary content remains unchanged, the mode of delivery has changed to the online format only. EMS 111 will be delivered via zoom, online chat activities and pre-recorded lectures. From the Accounting Education 113 module template, teaching and learning will be done using a flipped classroom approach via Zoom, Google classroom and PowerPoint presentations with audio. Online quizzes continue to account for 20% of the coursework and two written tests will contribute the balance. The first test will be predominantly multiple-choice questions while test two will be based on financial statements. The extent to which the mentioned deliverables will be implemented, such that students are able to achieve the learning outcomes of the module, let alone be equipped to thrive in the 4IR classroom, remains elusive.

Blending Digital and Technological Skills with Traditional Disciplinary Knowledge

In order to produce graduates with the required skills set for the 4IR, it is apparent that many HEIs need to rethink their educational strategies and objectives (Wilson *et al*. 2017; Joshi & Chugh 2009). At some institutions,

there may be need to strengthen the digital base, amend the curriculum to accommodate new content and adapt pedagogical strategies to facilitate learning in the 4IR (Yuhasriati *et al.* 2020; Penprase 2018). Although digitalization and interconnectivity allow for flexibility in lesson delivery via e-Learning platforms, caters for access/massification, and is relatively cheaper in terms of staff and facility costs, not all courses can be delivered that way (Yuhasriati *et al.* 2020; Xing & Marwala 2017; Mezied 2016). Further, technological and infrastructural (ICT and electricity) issues (Manda & Dhaou 2019; Karuri-Sebina 2019) that are very real in certain contexts, including South Africa, tend to disrupt the effectiveness of e-Learning. To this end, some scholars (Xing & Marwala 2017; Mezied 2016) suggest a blend of traditional face-to-face interaction with e-Learning, such as Massive Open Online Courses (MOOCs), video conferencing, forums or chats, etc. Blended learning can also be in the form of a flipped classroom using innovative approaches such as the use of Zoom and Google Classroom, among others. They can be employed in delivering abstract concepts to enhance understanding, especially in courses with practical and social components (Xing & Marwala 2017). Such methods, together with video conferencing, forums or chats are known to 'develop analytical expressions and problem-solving capabilities related to mathematical matters' (Xing & Marwala 2017:4)**.**

Without undermining the importance and effectiveness of the place-based learning, there is no better time for HEIs worldwide to adopt e-Learning platforms than today. The current global lockdown arising from the COVID-19 pandemic has compelled everyone to remain at home. In South Africa, all schools and learning institutions have been closed for at least one month, instead of the planned holiday of one week. No-one is sure of the state of academic affairs after the lockdown period. As such, the e-Learning platform becomes the only viable option at this stage.

For academics to be pedagogically competent in blending digital and technological skills with traditional disciplinary knowledge, some may need to retrain in certain areas and be equipped with relevant technology and digital tools (Lestari & Santoso 2019; Hussin 2018). According to the Education Technology and Mobile website (2016), a 21st-century educator should be able to,

> ... record and edit audio clips; create interactive video content; create infographics and posters; create personal learning networks, connect

and grow professionally; use blogs and wikis to create participatory spaces for students; create engaging presentations; create digital portfolios; curate, organise and share digital resources; and create digital quizzes such as 'Kahoot'.

In preparation for remote teaching and learning via the e-learning platform, UKZN has initiated a series of online workshops and webinars to prepare academics to convey learning and interact via online platforms such as Moodle, Zoom and Google classroom, to name a few. To ensure uninterrupted internet connectivity, the university has provided data bundles to all staff and is in the process of rolling out data bundles to students. Undoubtedly, this would have come at no small cost to the institution. As such, the yield on this investment in terms of enabling the future teachers with the desired skills set and digital/technological capabilities needed to convey disciplinary knowledge in the 4IR classroom, needs to be ascertained.

Theoretical Framework

The TPACK model propagated by Koehler and Mishra (2009) served as the framework to understand whether the blending of digital and technological skills with traditional Commerce Education content knowledge was captured on the revised module templates for remote learning.

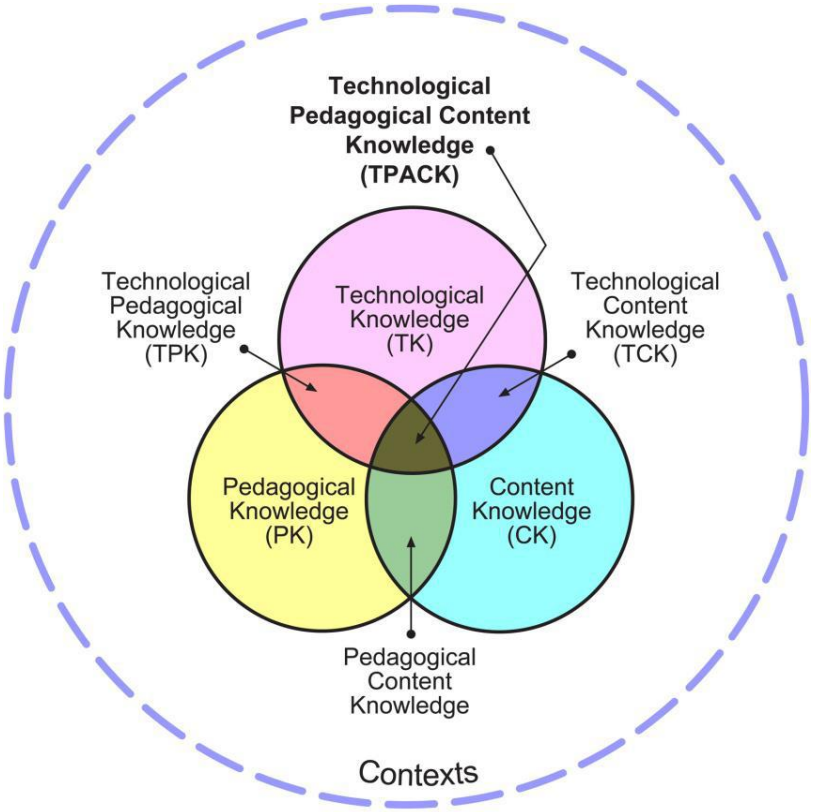
TPACK is the knowledge of utilizing suitable digital technologies to represent specific subject matter knowledge through successful instructional approaches and teaching strategies (Bingimlas 2018). Koehler and Mishra (2009) describe the different components of the framework as in the following:

- **Content Knowledge (CK)** relates to the traditional content knowledge that academics must possess in order to teach the subject. In Commerce Education, in the first year of study, this would include the knowledge, skills, values and other behaviours relating to accounting for the sole trader and entrepreneurship.

- **Pedagogical Knowledge (PK)** pertains to academics understanding of the diverse approaches and processes of teaching and learning. It covers learning theories, lesson planning, assessments and classroom management, amongst others.

- **Technological Knowledge (TK)** denotes fluency of information technology that extends beyond computer literacy to include digital literacy and in-depth understanding and mastery of ICT for 'information processing, communication and problem solving' (p. 61). Examples include 'blackboard, applications, software, smart devices, and social media' (Bingimlas 2018:2).

Figure 1. The TPACK framework and its knowledge components.



Source: Koehler and Mishra (2009:63)

- **Pedagogical Content Knowledge (PCK)** is the academic's means of transforming a particular content via multiple representation to enable learning. It 'covers the core business of teaching, learning, curriculum, assessment and reporting, such as the conditions that promote learning and the links among curriculum, assessment, and pedagogy' (Koehler and Mishra 2009:64).

- **Technological Content Knowledge (TCK)** is an understanding of how technology can be used to influence the content. Bingimlas (2018) describes it as the knowledge of technology to access content.

- **Technological Pedagogical Knowledge (TPK)** is an understanding of how technology can be used to support teaching and learning (Bingimlas 2018).

- **Technological Pedagogical and Content Knowledge (TPACK)** 'is an understanding that emerges from interactions among content, pedagogy, and technology knowledge' (Koehler & Mishra 2009: 66) that translates into meaningful and skilful teaching with technology.

This model is therefore useful in understanding teaching in a technological environment (Martin 2015) and deems the overlapping knowledge components as mutually dependent elements of a bigger, more composite knowledge system which need not be considered in isolation (Koehler and Mishra 2009). It is also beneficial in determining the knowledge that academics should possess in order to facilitate learning with technology effectively in diverse fields (Schmidt *et al.* 2009). As such, it describes how technology can be used to enhance student learning (Joo *et al.* 2018). The application of TPACK is, however, limited by lack of stable infrastructure, access to computers and readiness to embrace ICT amongst others (Joo *et al.* 2018; Kihoza *et al.* 2016). Nonetheless, in the 21st-century e-Learning environment, TPACK is tending towards 'a required area of expertise for teachers' (Joo *et al.* 2018:48).

Generally, the learning environments or contexts determine how academics employ technologies in teaching any subject matter (Mishra & Koehler 2009; Bingimlas 2018). This chapter is limited in this regard since the

online teaching of the module will go live only when the university resumes online teaching. Thus, further empirical research is required to explore the full impact of the pedagogical elements of the framework.

Methodology and Presentation of Findings

The methodology employed was located within a qualitative, interpretive research paradigm using the CED at UKZN as a case study. This preliminary research is based on the document analysis of two revised module templates that served as curriculum exemplars to determine the extent to which Commerce Education academics have blended digital and technological skills with traditional Commerce Education knowledge. Cohen, Manion and Morrison (2011: 206), contend that 'documents include official documents, which provide direct evidence of decisions that are directly or indirectly related to the phenomenon under inquiry'. In this case the selected revised templates (Accounting Education 113 and EMS 111) form part of the first-year Commerce Education revised curriculum that was prepared for emergency remote learning during the lockdown period. The documents outline the weekly learning outcomes, planned delivery mode and remote teaching activities, as well as the planned remote assessment strategies. Guided by the TPACK framework, a systematic examination and interpretation of the documents followed in order to 'elicit meaning, gain understanding and develop empirical knowledge' (Corbin & Strauss 2011:274) about the academics' intention of blending digital and technological skills with traditional commerce knowledge. While triangulation is preferred and the lived pedagogical experiences of both academics and students should be considered, academics are yet to implement virtual learning; hence, the only basis for understanding in the present day is via the review of curriculum documents such as the revised module templates.

The revised templates for remote learning 2020 can be described as the intended curriculum for these modules in the light of the COVID-19 pandemic. By reviewing the templates one can ascertain the academics' plan for achieving the objectives of the module. The analysis of the module template begins with a review of the learning outcomes followed by a discussion on how the template resonates with the themes from the TPACK model.

The planned learning outcomes for Accounting 113 are stated as follows.

Students should be able to:

- Apply and integrate business calculations and Accounting Education.
- Explain the nature and principles of Accounting as a discipline, with special reference to Generally Accepted Accounting Practice (GAAP).
- Outline the Accounting procedures in relation to bookkeeping (All Journals, including Salaries and Wages Journal).
- Analyse transactions based on the accounting equation.
- Prepare Reconciliations as it relates to Bank, Debtors and Creditors.
- Prepare Adjustments and closing entries.
- Prepare financial statements for a Sole Trader.
- Analyse, interpret and evaluate financial statements of a Sole Trader.
- Recommend appropriate internal controls (and auditing) for a Sole Trader.

From the EMS 111 revised template, students should be able to:

- Explain the qualities of an entrepreneur.
- Outline the process of acquiring a business.
- Develop a business plan for a new venture.
- Explain franchising in the SA context.
- Distinguish between Savings and Investment opportunities.
- Discuss the factors of production.
- Compare and contrast the different forms of ownership.
- Understand corporate social responsibility.

The above provides an indication of the knowledge, skills, values and other behaviours that students are expected to acquire as a result of their engagement with these modules. They specify the content and the planned cognitive attributes that students are expected to develop.

Drawing from the verb/ verb phrase, a fair proportion of the module outcomes for EMS aim to equip learners with higher cognitive attributes, differentiate concepts and develop a business plan. These skills are deemed essential for the 2020 workforce (Jananian 2020; PWC 2019). However, the Accounting module mainly engenders transfer of learning through the application of previously learned knowledge and skills, since only three outcomes target higher cognitive levels of analysis and evaluation. Since the ability to think

critically and solve problems creatively are mainly developed at higher cognitive levels (Anderson *et al.* 2001), it could be inferred that the Accounting 1 module does not equip students adequately with the human skills set expected of the 4IR teacher. This affirms the work of previous scholars that the accounting programme of instruction mainly promotes the transfer of learning (Arek-Bawa 2018), together with the fact that Accounting education students felt ill equipped with the relevant skills for the workplace (Lestari & Santoso 2019).

Also, teachers are expected to possess technological and digital skills to be able to work in the 4IR classroom. Avenues to enable such skills should be embedded in the curriculum and instruction (Lestari & Santoso 2019). However, there is no component of the module outcome aiming for the development of technological and digital skills in students, even though teaching and learning are expected to be conducted virtually, as catalysed by the COVID-19 pandemic. The learning outcomes in general then falls short in this regard.

As stated earlier on, themes from the TPACK model will be used in discussing the plan for remote learning included in the revised module templates. An excerpt from the templates for both modules are provided below: From the colour codes, red and green relate to PK; blue relates to CK; brown relates to TK; dark peach denotes reference to students; and online assessments is coloured purple, because it encompasses PK and TK.

Accounting Education 113 Planned session	**Session Outcomes**	**Planned delivery mode and remote teaching activity**
Week A: Session 3	General Ledgers	**Flipped Classroom: Materials already uploaded on Moodle, Review and tutorials via Zoom; Students to work through practice materials in textbook and continue on-line assessment on Dashboard.**

Week B: Session 1	Bank reconciliation	**PowerPoint with audio; Students to work through practice materials in textbook and continue on-line assessment on Dashboard.**
Week B: Session 2	Adjustments	**Flipped Classroom: Materials to be uploaded on Moodle, Review and tutorials via Google classroom; Students to work through practice materials in textbook and continue on-line assessment on Dashboard.**

EMS 111 Planned session	**Session Outcomes**	**Planned delivery mode and remote teaching activity**
Week A: Session 1	Business risk management and forms of ownership	**Online Chat Activity**
Week A: Session 2	Intellectual property and contracts	**Live teaching with Zoom**
Week A: Session 3	Entrepreneurial Leadership and Values	**Zoom pre-recorded lectures**
Week B: Session 1	Conflict Resolution	**Zoom pre-recorded lectures**

Technological Knowledge: Evidence from the template shows the use of technologies in the teaching and learning process all through the period. The template made reference to Moodle, Zoom, Google classroom, Dashboard, and online assessments, all suggesting the academics' familiarity with technologies needed to facilitate e-learning. While this is a good indication of technological savvy academics, it could also be a planned trial-by-error run of academics who are left with no other choice than to engage in virtual mode teaching catalysed by the COVID-19 pandemic. On a closer look, the variety of the technologies tilts the argument in favour of the former.

Content Knowledge: The content for the remainder of the semester specified in the module templates are *source documents and journals; general ledger; bank reconciliations; adjustments; financial statements; and ratio analysis* for Accounting, while the EMS content include *forms of ownership; Intellectual property and contracts; and entrepreneurial leadership and values*. Reference to *materials, PowerPoint* and *textbook* in the Accounting template could be an indication of the source for details relating to each topic. These academics are expected to possess an in-depth understanding of the content/subject matter in order to disseminate the same to students. However, the brevity of the content-related information contained in the template makes it difficult to ascertain the depth and extent of coverage.

Pedagogical Knowledge: The Accounting template mainly provides for a *flipped classroom* approach to teaching and learning, together with the use of *PowerPoint with audio*. The EMS template makes reference to *pre-recorded lectures* and *live teaching* with zoom. There are no details as to how teaching and learning will be conducted within the flipped classroom or live teaching experience. The information is rather scanty and deemed insufficient in assessing an educator's pedagogical competence. However, it is worthy to note that most sessions in the Accounting template make room for *review* and formative assessments in the form of *tutorials, practice materials* from the textbook and *online assessments*. The EMS template provides for an *online chart activity.* In spite of these, it could be argued that PK is broad. The inclusion of assessments in a flipped classroom or pre-recorded lectures may not engender the transformative learning power that is at the core of PCK expected of a competent academic (Lestari & Santoso 2019).

Technological Content Knowledge: The fusion of technological and content knowledge is mainly visible in the *uploading of materials on* Moodle and Zoom *pre-recorded lectures*. When using lectures, the content can be conveyed orally, guided by notes or slides. Indeed, PowerPoint is regarded as a technology-related vessel for content (Bingimlas 2018). An understanding of the workings of Microsoft Office, Zoom and PowerPoint are required to be able to encode the required content with audio on the slide.

Technological Pedagogical Knowledge: The use of technology to support teaching and learning is evident in the templates via planned *reviews and*

tutorials using zoom, Google classroom, live teaching with Zoom and Zoom *pre-recorded lectures*. The use of online platforms for chat activities, assessments and class tests also indicates the use of technology to support learning.

Technological Pedagogical and Content Knowledge: There is evidence of the interplay of technology, pedagogy and content knowledge in the planned enactment of the Accounting 113 and EMS 111 education programmes for the remainder of the semester. The use of a *flipped classroom approach* to *review materials and tutorials already uploaded* in *Moodle via Z*oom is a clear indication of some level of interaction of TK, PK and CK. However, the extent of integration is not readily ascertained from the template due to the brevity of the content description and the inclusion of only limited components of PK in the plan. One cannot categorically insinuate that the competences of an expert educator who simultaneously integrates subject matter expertise with pedagogical and technological knowledge to engender TPACK (Koehler & Mishra 2009) is manifest in the plan. This leaves room for future empirical studies that can engage or explore the lived experiences of academics to ascertain how TPACK is brought into play in the virtual classroom. On the whole we can conclude that some level of TPACK can be inferred from the plan, which can be likened to Bingimlas' (2018) conclusion that teachers in Saudi Arabia felt they were average in terms of TPACK. On the contrary, Kihoza *et al.* (2016) generally found low levels of TPACK knowledge amongst tutors and teacher trainees in Tanzania, even though the tutors were more technologically knowledgeable.

The module template for Accounting also suggests students' engagement in formative assessments as they are expected to *work through practice materials in textbook and continue online assessments on dashboard*. For students to carry on with online assessment indicates some familiarity with virtual assessments. Even though these first-year students barely spent two months at the School of Education before the closure of the academic session, most of them should be fairly familiar with accessing materials uploaded on Moodle, which was in process before they vacated campus. However, teaching via Zoom, Google Classroom and PowerPoint with audio is novel. Just as the academics have been trained, there is a need to train the students for them to develop the digital and technological skills (Martin 2015; Mayo, Kajs & Tanguma 2005) needed to acclimatize to the new digital learning environment

catalysed by the COVID-19 pandemic. These are skills that are not only relevant for the present-day academic success, but contribute to equipping them to thrive in their 4IR classroom (PWC 2019; WEF 2016). Lestari and Santoso (2019) emphasise the need to train Accounting student teachers on the use of accounting software for data processing and preparation of financial statements, amongst others. This is arguably applicable to the EMS student teachers, since 40% of the EMS school curriculum are drawn from Accounting. Such discipline-specific software skills based on the latest technology could be included in the accounting and EMS teacher education programmes by the university (Lestari & Santoso 2019) to obtain a technology-embedded curricula (Martin 2015). The TPACK framework, which has been found useful in teacher education programmes (Schmidt *et al.* 2009; Joo *et al.* 2018), will serve as a useful guide. Although the planned learning outcomes for the Accounting 113 and EMS 111 modules do not explicitly make provision for the development of technological and digital skills in students, the COVID-19 pandemic inadvertently catalyses the acquisition of these skills that have become mandatory for learning both at universities and schools.

Conclusion

Given the current COVID 19 pandemic that has necessitated the closure of place-based learning worldwide, this study sought to explore how Commerce Education academics in UKZN blend digital and technological skills with traditional content knowledge to prepare students for the 4IR classroom via e-Learning. The 4IR workforce are expected to possess digital and technological skills, in addition to traditional content knowledge with other human skills to excel in the workplace. Framed by the TPACK model, this chapter examined the content of the revised module template of the first-year commerce education programmes to offer an understanding of the blending of technological skills in disseminating content in a virtual environment. Even though the planned curriculum indicated some level of TPACK, which cannot be associated with that of an expert teacher, there are indications of the possible development of technological and digital skills catalysed by the COVID-19 pandemic. This study is limited in scope, due to the focus on first-year module templates, and calls for further empirical research to understand the lived pedagogical experiences of both academics and students who undertake such modules during this pandemic.

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COVID-19 and Emergency Online Teaching and Learning: A Challenge of Social Justice for University Rural Students

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Abstract

As a response to COVID-19, many universities have decided to use emergency online teaching and learning (EOTL) to salvage teaching and learning time and ensure that 2020 academic activities do not collapse completely. Drawing from social justice theory, this chapter provides a critical analysis of how EOTL, as a response to COVID-19 complexities, will not succeed in the South African rural context, hence exacerbating injustices for students from poor rural communities. We argue that students from poor rural communities encounter deep social and economic challenges that will collude to render EOTL in the context of COVID-19 unresponsive to the realities the majority of students from poor rural communities encounter. To show how EOTL may only favour the already privileged students, we first look critically at the context of rurality in terms of students' access to resources that are critical for learning through EOTL. Secondly, we expose the nature of the familial setup and learning space in South African rural families in order to demonstrate how the setup and space of EOTL are not conducive to learning. While responding to the current event of COVID-19, the chapter contributes to an understanding of how issues that characterise students from poor rural communities may result in the intended innovations, aimed at addressing COVID-19 complexities may in fact challenge the principles of transformation that many universities have made part of their visions since the demise of apartheid.

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Keywords: COVID-19, Rurality, Quality Education, Emergency Online Teaching and Learning, Rural Students, Social Justice

Silent thoughts from a student living in a rural area
Eish, I need money to buy ama-data so I can search for journal articles
But then how will I type it?
Maybe I can write it on a piece of paper for now,
And then go and type it at the internet café in town.
But I will need money for the taxi fare, and to pay at the internet café, Eish!
Maybe I can hitch-hike to and from town, then I won't have to pay the R80 that's wanted by the taxi.
I still don't understand what the lecturer wants.
Haibo! We are on lockdown, eish nx! Ngise njeni

Written by: ***Senzelokuhle Mpumelelo Nkabini***
(*Creative Network Magazine*)

Introduction

The insurgence of COVID-19 is reshaping every aspect of our lives. Universities are one of many entities that have been hit hard by the rapid changes that now confront us. The first wave of responses saw universities evacuate students from residences, which, if we now reflect, was a critical decision to contribute to 'flattening the curve' (World Health Organization 2020). Consequently, many universities in South Africa are now engaging with how to facilitate teaching and learning in the context of COVID-19. Through our affiliations and the media, we became aware of the strong push towards moving teaching and learning onto virtual and online platforms, imploring academics to familiarise themselves with the transition to these modes of teaching and learning. We refer to this 'push' in this chapter as emergency online teaching and learning (EOTL). Our conceptualisation is based on the premise that effective online teaching requires careful consideration in planning and instructional design, a process which is currently absent in most

instances in the current emergency shifts (Bozkart & Sharma 2020; Hodges *et al.* 2020). Universities have been toying with online teaching and learning (OTL) for years, but for many, it has remained at the level of rhetoric. Thus, (OTL) is not new, but it is currently being explored as the emergency response to the complexities emanating from COVID-19.

Against this agenda of EOTL, the reality faced by the majority of universities is the number of vulnerable students that are likely to be affected negatively by EOTL and these are students from poor rural communities. From 1994, the number of Black students, including poor Black rural origin students attending universities in South Africa has increased drastically (Cross & Carpentier 2009; Lephalala & Makoe 2012; Mngomezulu, Dhunpath & Munro 2017; Fataar 2018; Swartz, Mahali, Moletsane, Arogundade, Khalema, Cooper & Groenewald 2018). For example, the percentage of these students increased from 49% in 1995 to 68% in 2011 (CHE 2013; Munaka 2016; Gumede *et al.* 2017). As we demonstrate later, a lot has been written on the challenging experiences of these students as they join universities. In the poem above, Senzelokuhle Nkabini uses issues like data, taxi fare and her lack of understanding of what the lecturer wants, to introduce us to the deeply challenging realities that rural students encounter as they try to navigate the space of higher education in South Africa. Given these challenges, a critical question to ask is what EOTL will mean for students from poor rural communities' access to quality education in the context of COVID-19. Drawing from a social justice framework, this chapter attempts to respond to this critical question. We advance two interrelated arguments in the chapter. Being born and bred from rural and township locales, we are not disputing that rural origin students (ROS), as part of generation Z group, are capable of learning in adverse conditions. However, we argue that these students encounter deep social and economic challenges that will collude to render EOTL unresponsive to the realities the majority of students from poor rural communities encounter. From the first argument, we argue that EOTL in the context of COVID-19 and rurality will exacerbate social injustices that students from poor rural communities have already encountered at South African universities and will consequently collapse.

We begin this chapter by presenting social justice as a conceptual framework which we use to provide the premise for the argument that EOTL is bound to propagate limited access to education for students from poor rural communities. The second part of this chapter unearths the realities of being a

rural student at South African universities. In the third section we explore the unfavourable realities of rurality further by looking at the nature of access to resources required for EOTL and the familial setup and learning space in poor rural communities. Consequently, we look at how these access and familial features become creators of social injustice making access of students from poor rural communities to quality higher education a challenge. While our stance may be perceived as pursuing a deficit notion of being a rural student, we argue and believe that this chapter may provide a reflective account of what universities should be cautious about as they push towards EOTL.

Social Justice: A Conceptual Framework

We use social justice as a conceptual framework to explore what emergency online teaching and learning will mean for rural students' access to quality higher education. While we acknowledge the existence of multiple theories of social justice, in this chapter we intentionally do not align ourselves with one specific notion of social justice. Instead, we draw from multiple perspectives in order to provide a rich account of what we envisage as a socially just provision of education to university students from rural communities.

Much has been written about social justice, without offering a concise definition of it (Hytten & Bettez 2011). Similarly, Hlalele (2012) argues that social justice, like many social concepts, has varied and complex definitions. He further argues that 'a general definition of social justice is hard to arrive at and even harder to implement' (Hlalele 2012:112). Despite the varied and complex meanings, social justice is generally concerned with the achievement of a just and fair society (Brennan, Enders, Valimaa, Musselin & Teichler 2008; Hlalele & Alexander 2012). A just and fair society demands that people, despite their standing in the echelons of society, are afforded rights and opportunities (Hlalele 2012). Social justice has kinships and associations with notions of human and socio-economic rights, social inclusion, equity, and access to resources and capabilities for human wellbeing (Singh 2011). Hlalele (2012:112) further posits that 'social justice supports a process built on respect, care, recognition and empathy'. It is now accepted within the transformation agenda that education in South Africa and elsewhere should be provided within the confines of social justice. This view is driven by the fact that 'Education is a social entity and takes input from the society and returns output to it as well' (Abdullah & Chaudhry 2018:1). For education to contribute to the society,

ensuring the distribution of what is beneficial and valued to the society, it must be driven by principles of social justice. 'Higher education institutions are regarded as central to economic and social development because of their role in the production of knowledge, innovations, and high-level skills necessary for economic growth and competitiveness' (Singh 2011). We argue that in providing access to knowledge, innovations and high-level skills for rural students, universities are charged with the responsibility of dismantling institutional obstacles that have deprived rural students from participating on par with other students (Fraser 2008; Hlalele 2012) from affluent communities in social interactions.

Within the ambit of social justice, universities should ensure that in the provision of emergency online teaching and learning, the Constitutional right of rural students to education is not compromised. They further have to recognise and be empathetic to the learning difficulties that are posed by the socio-economic status of students and find approaches to circumvent undermining justice for these students. As mechanisms providing equitable access to knowledge, universities must ensure that rural students have the resources available that will facilitate access to knowledge and high-level skills. The big question is whether universities can achieve this. We are of the conviction that because of the negative rural realities and the experiences of students from poor rural contexts in universities, which we discuss in the subsequent sections, the move towards EOTL is bound to promote some deprivation of these students' access to quality education, which should be about unlimited access to knowledge and the attainment of high-level skills and innovation. This will in turn exacerbate, instead of disrupt and subvert arrangements (Hlalele 2012) that have promoted marginalisation and exclusion of rural students in higher education.

Towards a Socially Just EOTL

In South Africa, a socially just EOTL cannot be understood and conceptualised outside the parameters of Education White Paper 3 of 1997 (Republic of South Africa 1997), which is the first legal blue print advocating for social justice in universities. To provide a guide to what we see as a socially just EOTL, we use this White Paper, together with principles discussed in the preceding section. In order to consider recent developments, we also look into the debates around fourth industrial revolution (4IR) and its implications for a socially just EOTL.

The White Paper suggests eight principles for transformed higher education, which we believe socially just EOTL should respond to. In this chapter we focus on a few of these principles, namely equity, development, quality, efficiency, and effectiveness (Republic of South Africa 1997). From the context of 4IR, high-level skills have been noted as critical, and for university education to be regarded as just, its ability to provide such skills should be assessed (Yang & Cheng 2018).

Equity, as it relates to universities, moves beyond access to higher education to include ensuring that all students can succeed in it, ensuring that students have equal opportunities to develop their talents (James 2007; Robeyns 2011) regardless of their social status in the society. As it relates to students from poor rural communities, equity means these students are not only afforded space to enrol at universities, but it also means universities are obliged to create a space that is conducive to these students' access to knowledge, which is critical in developing their talents. Development is also linked to equity in that it has to do with enabling universities to contribute to the common good of society through promoting knowledge production and application, building human capacity, and promoting opportunities for lifelong learning (Republic of South Africa 1997), in line with this, a socially just EOTL should entail capacity building for all students so that they may contribute to the common good of their communities. We argue that this will require a space for knowledge sharing. Furthermore, 'the fast advancement of various technologies has led to partial or full automation of many job positions' (Xing, *et al.* 2018:173) and hence access to the equal development of talents will therefore be required to be in line with this feature of 4IR. Given the context of the 4IR, we also argue that socially just EOTL should also ensure that students develop advanced knowledge and skills to thrive in the highly technologised context.

Another important aspect of a socially just EOTL is its ability to expose students to quality education. Although the concept of quality higher education remains difficult to define and remains with multiple meanings due to different objectives that different universities are pursuing (Olaskoaga-Larrauri *et al.* 2016), here we define quality as the institution's ability to teach in such a manner that students are enabled to participate in and contribute to the wellbeing of their communities. Furthermore, from the 4IR perspective, it is argued that quality higher education can be viewed as education that exposes students to uninterrupted access to learning materials and making it easy reach

to peers. It is further argued that universities should take a great leap in promoting space for students to collaborate and be productive (Xing, Marwala & Marwala 2018). Consequently, we argue that EOTL should be pursued along these ends. Connected to quality are the concepts of effectiveness and efficiency as pillars of transformed universities. As with quality, an effective university is one that can achieve its goals, where efficiency is connected to effectiveness in ensuring that goals are achieved within affordable means (Republic of South Africa 1997).

Above we have explicated what, in our view and from literature and policy, constitutes EOTL that meets social justice demands. However, we need to ask: can universities respond to these social justice challenges through the current conception of EOTL? To respond to this question, we now provide a critical analysis of how South African students from poor rural communities have continued to suffer in universities as a result of social injustices. We do this to demonstrate how these students, now further affected by the abnormal setup posed by COVID-19, may not have access to knowledge in the way they would in a normal university environment and how this will exacerbate the challenge of equity, redress, development, effectiveness, and efficiency.

Challenges of Rural Students in a Normal University Setup

From the onset, we argue that while access for Black rural students has increased since 1994 (Cross & Carpentier 2009; Mngomezulu, *et al.* 2017; Fataar 2018; Swartz *et al.* 2018) the normal university teaching and learning setup where students have contact with lecturers daily has, to date, failed to ensure justice for many students from poor socio-economic backgrounds, which are mostly rural. Concurring with this argument, Mathebula (2019) argues that rural students who qualify for university entry in South Africa are likely to encounter perpetual challenges that require a constant struggle to succeed. He cites the failure of secondary schooling in preparing rural students well enough for university study. In this case, Mathebula talks about students who study through contact. This leaves no doubt that the new 'normal university' where rural students are expected to learn while at home will propagate the existing injustices that we have, for a long time, failed to address.

Cross and Carpentier (2009:15) argue that 'Black students from rural areas very often feel completely foreign to a campus culture dominated by cultural practices of middle and elites class tradition'. The foreign feeling is

associated with many challenging realities. The first one is the accessibility of curriculums due to language, difficult content, and technology-driven teaching and learning (Fataar 2018). As evidence of this, Diab, Flack, Mabuza and Moolman (2015), in their study of curriculum challenges encountered by South African rural-origin (RO) health-science students, found that ROs experienced course content, language of teaching and learning and technology used to access the content more challenging than their urban counterparts do. Similarly, Madondo (2018) posits that the science curriculum is organized in a way that favours certain worldviews over others and consequently leaves ROS feeling alienated, because what they bring with them is often not recognised or seen as significant knowledge in the science curriculum. The issue of language is also identified by Cross and Carpentier (2009) as a challenge to curriculum accessibility and they argue that the feeling of strangeness is reinforced by the difficulty for ROs to articulate their own system of values and express themselves in their mother tongue. Due to the above curriculum access challenges, ROs may end up being labelled as underprepared or underperforming students, and this has been linked with high dropout rates and failure to graduate on time (Cross & Carpentier 2009; Pillay & Ngcobo 2010; Fataar 2018; Timmis & Muhuro 2019).

The challenge of underperformance is not foreign in South Africa, especially among students from poor rural communities (Pillay & Ngcobo 2010; Mngomezulu, *et al.* 2017; Mathebula 2019). For example, in 2013, the Council of Higher Education (CHE) reported high dropout and incompletion rates for Black and Coloured students (CHE 2013). It is further asserted that only one in four students at contact institutions in South Africa complete their degrees on time. Furthermore, 48% of students from contact institutions complete their three-year qualifications in five years and in cases where some students have been excluded and re-admitted, only 55% finally graduate (Swartz *et al.* 2018), with the completion rate for Black students being 50% lower than that of White students (CHE 2016). This suggests that students from poor economic backgrounds, especially Black rural students at universities in South Africa are currently struggling. The challenge this abnormal COVID-19 era poses suggests there will be no contact at institutions, at least until the spread of the virus is capped. Given that students, especially those from poor rural communities have struggled under normal conditions, how will they flourish as distance student studying through EOTL? We argue that the failure of universities in fulfilling the ends of social justice in a normal contact

university means that it is highly likely that EOTL will not thrive in a context where students are exposed daily to the complexities faced by their families. In the two upcoming sections we provide further reasons to give credence to this argument.

EOTL and Rurality

In this section we delve into a critical discussion about what it means to be a rural student in the context of emergency online teaching and learning that COVID-19 has introduced. The realities of being a rural student at a South African university present two critical issues, which we believe threatens the success of emergency online teaching and learning, and consequently access to quality higher education for rural students. These critical issues can be categorised as: *Access to resources for online teaching and learning* and *familial setup and space for learning.*

Rural Students' Access to Resources for EOTL

Emergency online teaching and learning requires that all students, irrespective of their location, continue to have access to educational opportunities. We acknowledge that most of the student cohort that is currently enrolled in universities is the Generation Z (Gen-Z) population. This Gen-Z cohort is said to be the most diverse generation and the biggest consumers of technology. This has earned them the title of Digital Natives (Mohr & Mohr 2017). Having grown up in the information age, they are not intimidated by technology and are quite comfortable in using it to access information (Mohr & Mohr 2017). However, the digital divide leaves many students who are currently located in rural areas in a disadvantaged position. Because of various socio-economic factors, which will later be elaborated on, they are systematically digitally disconnected and find themselves in involuntary digital quarantine (Park 2017). So, while belonging to the Gen-Z, their circumstances have for the most part limited their access to the staples of modern life into which they were born (Hohlfeld *et al.* 2017).

Their limited access is influenced by the digital divide which describes how various multi-dimensional factors affect how the internet is accessed and used (Wessels 2010) and how these factors either enhance or inhibit this access. One of the factors relates to the demographic (age, ethnicity, gender) and socio-

economic factors (income, status, level of education) (Wessels 2013; Ragnedda & Muschert 2013). Another factor relates to infrastructure and the various material resources needed for access (Van Dijk 2005; Ragnedda & Muschert 2013). A third factor worth mentioning pertains to the divide being the product of low skills and limited cultural capital in the use of digital resources (Van Dijk 2005; Ragnedda & Muschert 2013). These factors configure in different ways across the globe and in South Africa geographical location and ethnicity significantly shape the digital inequities produced by the digital divide (Wessel 2013). The COVID-19 pandemic is imploring us to pay attention to the long-existing inequities that were systematically shaped by colonialism and apartheid, but continue to shape our current reality (Kathard, Galvaan & Kleintjes 2020). While these inequities exist in the wider society, they are more deeply entrenched for rural students and communities who, as a result of these previous systems, have experienced intense forms of disadvantage (Timmis *et al.* 2019). As such, COVID-19 has surfaced at a time when rural students are already experiencing the digital divide as an inhibiting barrier to their access of digital resources and technology. The pandemic has shown that it not only exacerbates existing inequalities, but simultaneously it creates new ones (Mohamedbhai 2020; Timmis 2020).

We now expand on how the above-mentioned factors influence students from poor rural communities and how the emerging proposals for EOTL will deprive these students of access to quality education. As previously mentioned, we are aware of the emerging proposals by universities who have articulated their intention to resume academic activities through EOTL. There has been a commitment by these institutions that they will try to the best of their abilities to leave no student behind. In order to fulfil this commitment, some universities negotiated with mobile networks for zero-rated access to certain university sites; they have committed to provisionally providing students with data; and have further stated that laptops will be provided for students (Dell 2020a; 2020b). It is, however, unknown how these initiatives will be financed or for how long.

What we do know is that data costs in South Africa are high, such that in 2016 there was a #DataMustFall campaign to compel providers to reduce data costs (Chothia 2017). These high costs will be a prohibitive factor if students are requested at any stage to purchase their own data (Chothia 2017). This will be even more challenging for rural students because they come from poor families where financial resources are already strained (Mngomezulu *et*

al. 2017; Sulla & Zikhali 2018; Swartz *et al.* 2018). This is just one of many obstacles that Senzelokuhle highlights in his poem where he wonders where he will obtain the means to purchase data. The geographical location of rural students is also a barrier to access. In rural communities, internet connectivity and accessibility to a stable connection are scarce and in some remote areas these are not available at all (Chothia 2017). So, while the provision of laptops and data may circumvent access that emanates from a lack of hardware and inadequate income, this response is premised on a binary view of the digital divide, which assumes that access is merely about these resources.

As explained above, and shown in the previous discussion, there are other significant factors that inhibit access. Scholars (see Cross & Carpentier 2009; Czerniewicz & Brown 2014; Holhfeld *et al.* 2017; Park 2017; Timmis 2020; Timmis & Muhuro 2019) argued that access is multi-dimensional and digital inequalities are not only perpetuated by a lack of ICT access and technological infrastructure and resources. We argue that the rural ecosystem and the lived experiences of students in these areas are multi-faceted and the proposals offered ignore and misrecognize the circumstances faced by rural students. Cross and Carpentier (2009:7) posit that the advent of massification resulted in universities having to provide access to what they term 'new students' or 'non-traditional' who 'fall into the category of poorly or under prepared' and come from families who 'are more and more distant from the cultural and intellectual norms required by the educational institution, usually dominated by the values of the elite'. During this expansion to access universities made little effort, if any, to transform from within and acknowledge, recognise, and accommodate this 'new student' cohort (Timmis *et al.* 2019).

The 'new students' have remained invisible and on entering universities they have to renegotiate themselves, their knowledge, their practices and identities against trying conditions in order to 'bridge the gap and work their way across the community/school and university divide' (Fataar 2018: 8). This working their way across also pertains to the rural students having to bridge the digital divide that is caused by the limited digital literacies they bring when they enter the university. Studies (see Kajee & Balfour 2011; Czerniewicz & Brown 2014; Timmis *et al.* 2019; Timmis & Muhuro 2019) looking at the digital literacies of first-year rural students have reported that rural students have limited opportunities to cultivate digital literacy prior to entering higher education. This is the result of being at schools and in

communities where ICT facilities are not available and of having limited economic capital to purchase smartphones, laptops and/or data. In some communities, internet cafés do exist, but they are located far away and require additional commuting costs, which unavailable are at most times as a result of insufficient economic capital (Timmis & Muhuro 2019). Senzelokuhle's poem epitomizes similar constraints and struggles pertaining to data affordability and the additional high cost of having to commute to an internet café.

Rural students thus enter the university with limited cultural capital in terms of digital literacy (Kajee & Balfour 2011; Czerniewicz & Brown 2014; Timmis *et al.* 2019; Timmis & Muhuro 2019). This is not alarming, because digital literacy is unattainable without digital access and the ability to use it efficiently and effectively (Holhfeld *et al.* 2017). Consequently, this prior lack of digital access, which is not of their own doing, makes it difficult for transition when they enrol at university. In their first encounters with technology students experience anxieties and challenges, such as not even knowing how to operate a computer or laptop and having their assignments disappear (Timmis & Muhuro 2019). It creates challenges for them when they must compete on equal footing with digitally competent students from affluent communities (Kajee & Balfour 2011). This lowers their self-esteem, as they see themselves as inadequate and dispositioned against the technological expectations of the university (Timmis & Muhuro 2019).

Together, the studies above provide insights into the digital divide that exists when rural students enter universities. While the focus of many of these studies is on first-year entrants, we argue that these findings may be stretched, as well as apply to those at other levels of study from similar contexts. We make this assertion because some universities are still in the process of integrating blended learning and the acquisition of digital skills is related to usage levels (Park 2017) which students have not been sufficiently exposed to. Unless these students have been fully acculturalized with the necessary digital skills and literacy, emergency online teaching and learning may also disadvantage them, given that they already face the challenges previously mentioned. We argue that the digital divide that currently exists cannot be mitigated under the current circumstances to ensure that values of justice, fairness and equity are upheld through EOTL. We further submit that is too optimistic to believe that EOTL will ensure equity and quality, given the challenges that rural students currently encounter at the 'normal university' and now in the proposed remote learning space where they find themselves.

Familial Setup and Space for Learning for Rural Students

In a recent book, *Studying while Black: Race, Education and Emancipation in South African Universities*, by Swartz *et al.* (2018), the reality of the familial setup many working-class students find themselves in is well documented. Through the interviews with some Black students, the authors alert us to the issue that some Black students come from families where there are both social and economic obstacles. One social challenge is that once students leave their residences, they join families where there are no biological parents and they live with grandparents or their relatives. In other cases, students assume the role of parents themselves in different forms (Mngomezulu *et al.* 2017). Swartz *et al.*'s (2018) study further finds that families of students studied experienced rapidly changing financial circumstances as an obstacle to their studies. Consequently, Mngomezulu *et al.* (2017) in their study about why university students continued to perform poorly despite being funded, found that students from poor family backgrounds use their funding to support their families. It is argued that learning occurs in a wider social context (Mokoe 2006) and it involves actions and reactions in an exchange between an individual and the external environment (Robotham 2004). To show how the context may drive the actions and reactions of students, the stories of students from Mngomezulu, *et al.* (2017:137) teach us that 'the suffering of their [students'] families contributed to their psychological schemas, which consequently impacted on their academic performance'. It is important to highlight that these sufferings happened when students were accommodated in university residences away from exposure to the daily family sufferings. On the contrary, emergency online teaching and learning will occur while students are home and exposed daily to the psychologically and emotionally draining realities of poverty. Education driven by social justice, as coined by Sen (2011), is driven by the agenda of ensuring that every student is able to flourish. Given this, we argue here that the familial circumstances presented above provide a social and economic context within which universities expect learning and access to quality education to occur. However, we are of the view that flourishing as a student in the described context may not be easy and is bound to subject rural students to injustice in terms of basic access to education. The above context can render it hard for rural students to engage in emergency online teaching and learning, which will undoubtedly limit their access to quality education, a social justice concern.

In addition to social and economic difficulties, the familial space for rural students may not be conducive to emergency online teaching and learning to take place due to multiple reasons ranging from access to technological resources as discussed earlier and rural family space as communal and shared. Regarding resources, many rural African family spaces lack access to basic technology. The students lack access to a home computer and where the computer is available as provided by universities for emergency online teaching, many rural towns do not have high-speed Internet connections (Malhoit 2005; Mahai 2014). Despite the access to resources, when rural students are at home, they are exposed to other family responsibilities that make the space less conducive to learning. For example, in a study conducted in Tanzania on rural students' experiences of an open university, Mahai (2014) shares a story of a student who was only able to study on weekends due to other family commitments during the week. While this student was busy with his employment responsibilities, Mahai argues in his study that other students relied on support from other family members to be able to study, which suggests that, depending on the family characteristics, emergency online teaching and learning may not work. Supporting this from a South African context, Moletsane (2012) argues that rural life is governed by a sense of collective responsibility from an early age. Rural students will be expected to share home responsibilities during this time and with some being the only adults in their families, emergency online teaching and learning are bound to fail as a result of the strenuous nature of rural home responsibilities (Timmis *et al.* 2019). These types of challenges are likely to disadvantage female students more than male students, as women may be unable to escape household responsibilities like cooking, fetching water and firewood.

In addition to family responsibilities, extended family households dominate most rural South African families (Amoateng & Ritcher 2003) and our experiences as authors coming from extended families teach us that in a poverty-stricken, extended family environment, students do not even have a chair and table to study at. Furthermore, the size of the family means that the space is frequently communal and may not allow for individual study activities. We cannot ignore the reality that the conditions outlined above are adverse and not conducive to online teaching and learning. However, by making this point we do not neglect the fact that rural students have already demonstrated their resilience and capabilities (Malhoit 2005; Calitz 2019) by making it to the university and hence they can study under these conditions. However, our

argument is that pushing them to study in this kind of setup is an injustice and bound to affect their access to resources relevant for gaining knowledge (Mathebula 2019).

In his address to South Africans, Dr Blade Nzimande acknowledged that higher education is aimed at transformation and dismantling poverty. It is now the same poverty that higher education is aiming to address that is a major barrier, because the conditions, as described above, are not conducive to EOTL. We argue that the setup and space are barriers to access and students should not be expected to study in an environment where they will not have equal opportunities to develop their talents (James 2007; Robeyns 2011), a social justice demand. As mentioned earlier, social justice has kinships with social inclusion, capabilities for human wellbeing, care, recognition, and empathy (Singh 2011; Hlalele 2012) and to enforce EOTL under such conditions can be a contradiction and indictment to these values.

Concluding Thoughts

In this chapter our intention was to draw from a social justice framework to argue how EOTL as a response to COVID-19 complexities will not succeed in the context of rurality, hence exacerbating injustices for students from poor rural communities. We argue that students from poor rural communities encounter deep social and economic challenges that will collude to render EOTL in the context of COVID-19 unresponsive to the realities that the majority of students from poor rural communities encounter. In line with our argument, in the chapter we have shed light on what a socially just university and EOTL entail and through the discussion of access to resources for students from poor rural communities and familial setup and space for learning, we have demonstrated how EOTL, in the context of rurality and COVID-19, will expose students from poor rural communities to education that limits their access to equity, development, quality, effectiveness and efficiency. While, in this chapter our task was to respond to a situation that might be a once-off event, it has shown that institutions should be ahead of change, and innovation proposals should not contradict the outcomes of transformation that the same universities have premised their vision statements on. We note that universities have been toying with online teaching and learning for years, but for many, it has remained at the level of rhetoric; hence the rushed phasing in, which disadvantages some students. We do not suggest in this chapter that students

in poor rural communities are not capable and resilient enough to adapt to virtual ways of learning. However, we caution against a one-size-fits-all approach that will result in the further marginalisation of students from poor rural communities.

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Reflections on Differently Abled Students' Challenges with Online Learning amidst the COVID-19 Pandemic and Lockdown

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Abstract

The normal teaching, learning and assessment for students who are differently abled is through contact teaching where they receive support from specialists, peers, carers, and the Disability Unit. Specialized equipment and physical support for students who are differently abled are located in the University facilities and mostly occur within the university environment. The COVID 19 pandemic disrupted face-to-face contact teaching, and in an effort to contain the spread of the virus and save the academic year, universities were required to shift to remote online teaching and learning. This chapter responds to the gap identified in the literature and focuses on challenges with online that students who are differently abled face during the COVID-19 pandemic era. The chapter focuses on one research question: What challenges do students who are differently abled faced with online learning during the COVID-19 pandemic era? We embraced an ecological perspective on learning to (re)think how learning spaces arise through the interdependent interactions of students who are differently abled with teaching and learning materials, digital tools, lecturers, parents, and the community in a multiplicity of contexts that are bounded within an ecosystem. The study was framed by Bronfenbrenner's Ecological System Theory. Zoom was used as a platform for data generation. Data were generated through photo elicitation reflections from three

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participants from one campus at a South African university. Data were initially analysed by NVIVO to obtain codes; thereafter similar codes were grouped into themes. Our findings illuminate the bi- and multidirectional influences of (f)actors within and across the university, students' home and community contexts that shape differently abled students experience of online learning. Our findings highlight the need to forge collaborations across various spaces that students who are differently abled find themselves in. At a theoretical level our findings call for the need to reconceptualize learning spaces.

Keywords: COVID-19, differently abled, Higher Education, online learning, challenges

Introduction

The onset of COVID-19 brought an abrupt halt to many activities taken for granted, such as contact sport, attending large social gatherings, schooling, going to work and travel. Social distancing, wearing of masks, sanitising, working from home, home-schooling and online teaching and learning have become the new 'normal'. The pandemic has sparked robust ethical debates within the education sector about the need to save lives, save the academic year, and ensure that no student is left behind, whilst being cognisant of issues of culture, equity, and social justice. The COVID-19 enforced lockdown has required of universities to suspend contact sessions to contain the spread of infections amongst the university population and to embark on remote online teaching and learning. Whilst the shift in the mode of delivery from contact sessions to online learning by universities during the COVID-19 period has been hailed as panacea for the academic year, it restricts the inclusion of students who are differently abled. Students who are differently abled are more vulnerable than other students, as they have more needs related to healthcare, safety and accessibility. In the decisions made about remote online learning during the COVID-19 pandemic, students who are differently abled have become the most vulnerable and isolated. Under non-COVID-19 conditions the teaching, learning and assessment for students who are differently abled occurred via contact teaching where they received support from specialists, peers, carers, and the Disability Unit. Specialized equipment and physical support for students who are differently abled are located within the university facilities and environment. Thus, during the lockdown period this specific

group of trainee student teachers had limited access to academic support, were isolated from an enabling university environment, and had limited opportunities for socialization and collaborative learning. Research on teacher preparation that is specific to online learning and specific to students with disabilities are scarce (Kennedy & Archambault 2015).

This chapter responds to the gap identified in the literature and focuses on challenges faced by students who are differently abled with online learning during the COVID-19 pandemic era. It emphasises the need to develop a relational, plural, emergent understanding of online learning spaces in terms of pedagogical and technological means that ought to traverse institutional, social, and cultural boundaries to help all students (both abled and differently abled). In other words, the online learning space is conceived as an ecosystem that comprises many processes that are spread across different contexts, boundaries, or spaces. Our concern is how spaces of online learning are shaped to support students who are differently abled. In line with our above rationale, we embrace an ecological perspective on learning. An ecological perspective of learning allows us to (re)think how learning spaces arise through the interdependent interactions of students who are differently abled with teaching and learning materials, digital tools, and lecturers in a multiplicity of contexts that are bounded within an ecosystem.

Literature Review

According to the *Strategic Policy Framework on Disability for the Post-School Education and Training System* (2018:viif):

> Disability is defined as the loss or elimination of opportunities to take part in the life of the community, equitably with others, encountered by persons having physical, sensory, psychological, developmental, learning, neurological or other impairments, which may be permanent, temporary or episodic in nature, thereby causing activity limitations and participation restriction within mainstream society. These barriers may be due to economic, physical/structural, social, attitudinal and/or cultural factors.

The effect of COVID-19 has increased economic, physical, social, attitudinal and/or cultural barriers, particularly for students with disabilities, due to the

shift from contact learning to online learning without physical and technological support. The Constitution of the Republic of South Africa Act 108 of 1996 has codified the rights of all people in South Africa in the Bill of Rights.

The White paper for Post-School Education and Training has mandated the Department of Higher Education and Training (DHET 2013) to recognize the right of people with disabilities and their participation or access to higher education as part of the transformation process in South Africa. Universities provide a range of support such as assistive technology laboratories with screen readers, dictating software to enable normality and enabling them to be in mainstream education (Wisniewski & Sedlak 1992). Mudau, Netshisaulu and Ncube (2019) contend that students experience challenges at higher learning institutions; however, students with disabilities experience another layer of challenges such as learning support, infrastructure, and social life.

The onset of the COVID-19 pandemic has demanded learning institutions to suspend classes and change the learning mode from contact lessons to online learning. This demand has implications for students who are differently abled. For example, they face increased isolation during the lockdown period as it limits accessibility of academic support and isolation from an enabling university environment and experience increasingly limited social life.

Social life exclusion and shifting the mode of learning and teaching to online learning contribute to stress and anxiety experienced by students with disabilities (Lambert & Dryer 2018). McManus, Dryer and Henning (2017) conducted a study on barriers to learning online experienced by students with a mental health disability. One of the findings suggests that the learning environment was a major challenge for students with disabilities. Similarly, the effect of COVID-19 was exacerbated by lockdown and social distancing requirements. Stone (2017) highlights the importance of teacher presence, which plays a crucial role in building a sense of belonging amongst students living with disabilities in the learning environment. When students engage with online activity, the sense of belonging is not as strong as when students learn together in the classroom, because they meet virtually. Time is limited and being in a virtual group is limited because of data. Edwards (2019) conducted a study about online learning experiences of students with disabilities on inclusive learning and teaching at an Australian University and the findings

suggest that collaborated effort is required from curriculum designers, policy makers and educational leaders. Collaborated effort in planning holistic learning is of importance; however, due to COVID-19, Universities had to rush to save the academic year, where academics were working in isolation to change the mode of learning to online learning. The time available for lecturers to shift from contact sessions to online learning was limited and excluded inputs from other stakeholders.

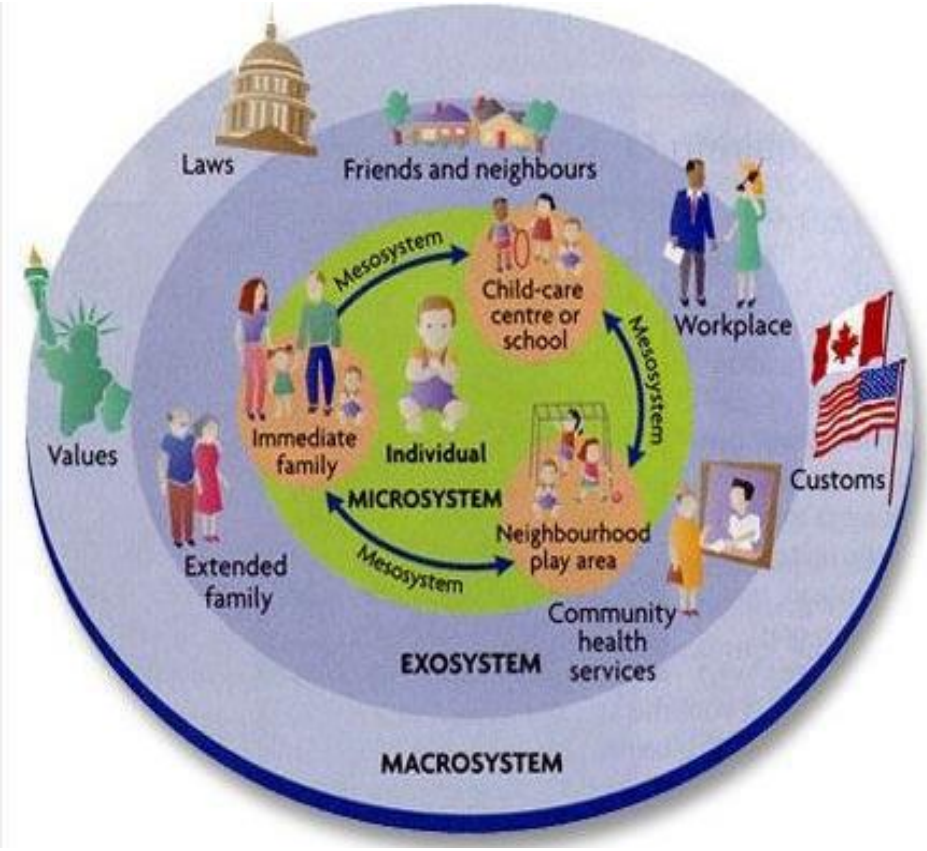
The contextual diversity among students contributes to the digital divide among students. According to Mahlangu (2018), students need to be trained for online learning in order to learn how to use the technology, develop time management skills, gain confidence, and learn how to cope with online posts and debates. Furthermore, Bali and Caines (2018) assert that with online learning students are expected to present their views on a public platform and, if they do not know how to do this, it creates a problem for some of these students, or if they are uncomfortable expressing their views publicly in an open platform, it could be problematic. Thus, it is important for students to be trained for online learning.

Theoretical Framework

Studies by Booth *et al.* (2013) and Mole (2012) reveal that students who are differently abled not only lag behind other students on standard measures of achievement, but are also more likely to drop out of campus and are twice as likely to stay longer in the system. Considering the above evidence, we opted to embrace a theoretical framework that would enable us to explore the challenges faced by students who are differently abled with online learning during the COVID-19 pandemic era. The Ecological System Theory (EST) (Bronfenbrenner 2005) is an apt theory to underpin this study, as it provides a framework that emphasises the interaction between an individual's development and the multiple systems within the social context. In other words, EST allows for unpacking the complexity of the influence, interactions and interrelationships between students who are differently abled and the systems that are (dis)connected from the student.

The use of EST allows us to conceive disability as the resultant product of the dynamic interaction between humans and their surroundings. This shifts the emphasis from students who are differently abled to the broader social, cultural, economic and political environment within which the student is

located. Simply stated, this means that '(dis)ability' may be perpetuated by the (dis)enabling environment. In other words, the EST Model construes the disabling practices of society (in this instance the universities' online learning systems) as contributors to the further disability of students who are differently abled (Bronfenbrenner 2005).



Source for Bronfenbrenner's Ecological System Theory: Berk and Roberts (2009:12)

Bronfenbrenner's theory highlights the layers or levels of interacting systems that impact human development; hence, human behaviour, experiences and actions cannot be understood without the context within which they occur

(Bronfenbrenner 2005). The isolation limits the interaction with peers and physical engagement with lecturers, and negatively impacts students who are differently abled.

Bronfenbrenner's model illuminates the complexity of the interaction and interdependence of multiple systems that affect individuals, their development and learning. Barriers to learning arise in these dynamic interactions. Furthermore, EST allows us to conceptualise the online learning space as a dynamic ecosystem that comprises many processes spread across different systems/contexts, boundaries, or spaces.

Methodology

This qualitative study was located at a teacher training campus at Richwood University (pseudonym) in South Africa. Participants for the study were purposively selected based on their proficiency and knowledge about the researched phenomenon (Creswell & Creswell 2017). In this study there were three participants, one from the disability unit and two from the teaching and learning office. The participant from the disability unit liaises with academic staff informing them about the students' special learning needs. She has regular meetings with the students and is responsible for ensuring that the specialized equipment required by the students is available within the university environment. The two participants from the teaching and learning office were academic leaders responsible for the remote online teaching and learning programme adopted by the university. Participants were assured of confidentiality and anonymity.

The lockdown and the Covid-19 pandemic elicited the three researchers to think anew about data generation, as conventional methods of data generation were not possible. Zoom was considered as a platform for data generation for the following five reasons: it is convenient and cost-effective; it has screen-sharing abilities for both the interviewer and participants (to display and discuss documents for example project details, informed consent, etc); Zoom includes password protection for confidentiality (only invited participants can log in); Zoom allows for recording of interviews and automatically saves the interview recording into two files formats, audio only and a combined audio/video file. To safeguard the identity of the participants during the recordings, participants were requested to wear masks that hide the face.

Three Zoom meetings of 30 minutes each were used to generate data via photo elicitation reflection. These meetings were recorded with the informed consent of the participants. For each Zoom meeting, a host was appointed by mutual consent among the researchers to probe/seek clarity during the photo-elicitation session; however, the other two researchers could press the reaction button when they needed to probe an issued further.

Photo elicitation is the use of photographs to generate verbal discussion (Thomas 2009). The difference between conventional interviews and photo elicitation lies in the way participants respond to the symbolic representations in the photographs.

For the photo elicitation,[1] the visual images were chosen by the participants on the phenomenon being explored and during the interview the participants were asked to reflect on their chosen visual image/s (Bigante 2010). In this study we opted for participants to select pictures or drawings linked to the focus of the study and then reflect on them during a Zoom session, thus making it a collaborative rather than a researcher-driven effort. Shaw (2013) refers to the above method as participant-driven photo elicitation, because in the interviews or reflection sessions participants lead the conversation about the images. The advantage of participants selecting images/drawings is that participants might bring content to interviews that is not available, noticed or considered important by the researchers (Guillermin & Drew 2010), and it counterweighs the unequal relationship between researcher and researched (Clark-Ibánẽz 2004).

All Zoom recordings were transcribed verbatim and sent to participants for member checking. Member checking, also known as respondent validation, is a technique used by researchers to help improve the accuracy, credibility, and validity of the data generated (Creswell & Creswell 2017).

These transcripts, were fed into a qualitative analysis package, NVIVO, to generate tag clouds.[2] These codes were then manually traced within the transcripts to track their associations with other codes. The transcripts were

[1] Photo elicitation – consists of narrative on the photo chosen followed by an interview on what was stated during the narrative.

[2] Tag clouds are the word frequencies of the text, represented in different fonts to indicate the importance of the respective code within the text (the larger the front, the more important the code).

read and reread before patterns of associations could be identified. The exercise was also to illuminate the bi- or multi-directional interconnectedness of codes across the various learning spaces or layers of the EST model and its impact on online learning for students who are differently abled. The interconnected codes were regrouped and collapsed into four themes. For example, the codes, connectivity, power outages, assistive devices, technical support, and technical training were regrouped into the theme, technical ecological resources, while the codes, teaching methods and content design, were grouped as teaching resources. The codes, time and home environment, were grouped into the theme, home-study balance. The codes access, institutional support, lack of parental support, no contact with fellow friends from the disability unit, confidence and cannot work alone, were grouped into the theme, collaborative ecosystems.

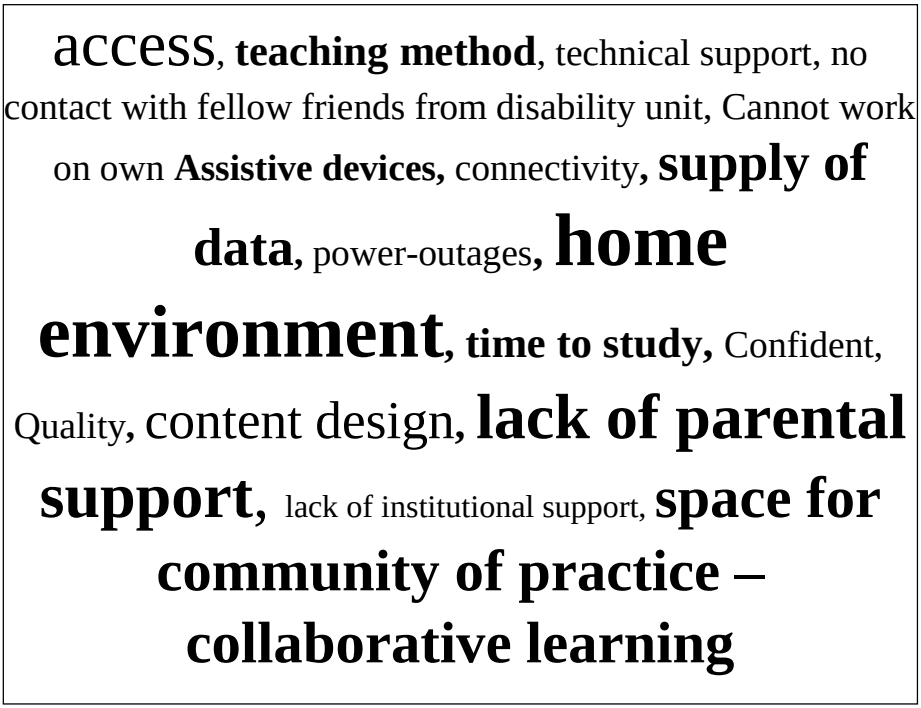


Figure 1: Tag cloud illustrating frequently used code

Findings and Discussion

In this section we attempt to respond to our research question: What challenges do students who are differently abled face with online learning during the COVID-19 pandemic era? Data generated via photo-elicitation interviews were used to answer the research question. Our analysis makes explicit the nuances of exclusion that challenge students who are differently abled, namely technical ecological resources, teaching resources, home-study life balance and ecology of collaboration.

Technical Ecological Resources

The technical ecological resources are an amalgam of the following codes, connectivity, power outages, assistive devices and technical support and technical training. These ecological resources are located within the students' microsystem according to the Ecosystem theory.

Various steps and processes are put in place to ensure that printed learning material are easily accessible to students who are differently abled during face-to-face learning. Moreover, the university must ensure that all technical recourses required to facilitate online learning are readily available to students for them to engage in online learning. In the absence of these vital resources online learning becomes fallacious and a frustrating challenge to students who cannot access their learning material, as it evident in the excerpts below:

> *The lack of infrastructure, not receiving data timeously and poor unstable internet connectivity and load shedding are barrier and challenges to all students but more so to differently abled students who rely on assistive technology located at the university lab for learning and to access information. Due to the restriction of movement, students were not able to access the university lab* (Photo-narrative, S).

Similar views were expressed during the photo-elicitation interviews:

> *How do differently abled students who continue to receive data late from the university ISC department make up learning when the*

> *teaching of a particular section is over? Is there catch-up teaching for this cohort of students?* (Photo-elicitation interview, A).

> *My concern is with our students with disabilities, how do we expect them to cope with online learning without their specialized equipment, we have not trained them or given them technical support for online learning, they have only engaged in face-to-face learning, online learning is totally new. We cannot have a one size fits all approach with our students, if we are to embrace the universities stance of no student being left behind. What mechanisms are in place to support this cohort of students? I'm deeply concerned* (Photo elicitation interview, R).

The excerpts above bring to the fore the contextual realities that confront differently abled students across their learning spaces. The lack of essential resources like data, stable connectivity and assistive aids impacted students' ability to embark on online learning. In South Africa, internet connectivity is further challenged by power outages brought on by load shedding. The above findings resonate with those of Heydenryck and Prinsloo (2010), who emphasise that limited access to electricity, data, and telephone networks impacts access to the Internet and is a barrier to online learning (Olunyika & Endozo 2019).

It is visible via the above excerpts that, as a university, in our haste to shift to online learning, even though the university has supported students with data students who are differently abled had another added layer of need such as assistive technologies (AT). Georgeson, Mamas and Swain (2015) explain that students with disabilities obtain more meaningful learning experiences if they have access to AT like alternative interfaces (e.g. screen readers), reading tools (e.g. text-to-speech), recording tools (e.g. voice recording), writing tools (e.g. word prediction), planning tools (e.g. mind-mapping software) and communication tools (e.g. synthetic speech). Consequently, we have 'locked out' students who are differently abled from online learning, pushing them to the peripheries of academic isolation without the adaptive technologies or skills needed to cope with online learning. The above findings are aligned with those of Van Jaarsveldt and Ndeya-Ndereya (2015), who identified technological barriers, a lack of awareness, and poor liaison among the

institutional stakeholders and lecturers from the responsibility of providing technical support to students who are differently abled. Additionally. the above excerpts illuminate the parallel twofold online teaching and learning platform contexts that characterize Richwood University in terms of variances in infrastructure (one for abled students and the other for differently abled students). Such discrepancies in access to resources can increase the digital divide among students. Consequently, students who lack access to the required technical resources can get left behind further in an already compromised and divided education system (Ramarathan 2020). Thus, concerted efforts must be made by the university powers to address contextual challenges that impede students who are differently abled from accessing online learning. At a theoretical level, the findings bring to the fore the bidirectional influence of the (lack of) technical ecological resources within the university and within the students' sociocultural environment, and the collective influence on the student and their engagement with online learning. The Ecological System Theory elucidates the multiple interconnectedness of the technical resources that influence the differently abled student' engagement with online learning.

Data collected from students with disabilities in a UK higher education institution showed that students with disabilities lack the correct digital capital to enable them to succeed within higher education environments. Thus, it is important for higher education institutions to 'conceptualise' and organise' technology-related support services for students with disabilities, to support and promote access to equitable educational experiences and outcomes (Georgeson *et al.* 2015).

Teaching Resources

Inaccessibility to teaching content and design of on-line learning materials were a barrier to students who are differently abled, as is highlighted in the excerpts below:

> *Teaching online is not the same as teaching face to face, it is important to know how to design and present content for online teaching to facilitate student learning. You cannot just transfer your face-to-face lesson plans and assessments to the online teaching platform and expect students to engage and pass. In the absence of the human touch, one has to find new ways of communicating, sustaining interest and*

> *encourage engagement in the lesson on a virtual platform, especially for students who are differently abled* (Photo narrative, A).

Similar views were expressed during the photo-elicitation interviews.

> *Staff attended many training sessions and on how to use the various technology platforms to engage in online teaching but we still need to move to the next level by organizing training on pedagogy for online teaching for students who are differently abled. This area is lacking and will compromise students learning* (Photo-elicitation interview S).

> *During normal face-to-face teaching, content material is adapted for students with special education need. How can we expect this group of students to access materials presented in one form only? We have excluded this group of students from online teaching. The dry run attests to these students lack of engagement and their cry for help by requesting to return to campus* (Photo elicitation, R).

The above excerpts elucidate the challenges associated with online learning, namely the lack of human touch between the lecturer and students who are differently abled, the need to actively facilitate, communication as well as the need for specific pedagogy for online teaching, and the design of materials. When one teaches in person, students are engaged in several activities such as explaining, guiding, scaffolding, and questioning. In our haste to prepare for online teaching, teachers have often translated their face-to-face practice to their online practice. The use of face-to-face material for online teaching does not ensure that it is accessible by students who are differently abled. Lecturers must ensure that the materials designed must also cater for the social inclusion of students who are differently abled, be it visual, hearing, motor, and cognitive impairments. Van Rooij and Zirkle (2016) assert that catering for students who are differently abled in the design of the learning materials greatly enhances the interaction of students with online learning. Similarly, Cooper (2015) maintains that online material that cannot be read by screen readers, or accessed without a mouse, and educators who have little knowledge of how to ensure that their courses are accessible, exacerbate the difficulties faced by students who are differently abled. The introduction of relevant technologies can provide support to students in their learning, only if more is known about

how they process information. According to Berkshire and Smith (2000), pedagogical decisions require full consideration of students' personal histories as learners, linguistic strengths and obstacles, group mores relative to academic performance, and wider social and cultural realities. The unique learning styles of students who are differently abled call for an increased flexibility, not only in the design of the curriculum and syllabi, but also in delivery modes and instruction (Fahy, Steel & Martin 2010).

The above challenges impede the learning process for differently abled students, who have access to human contact and specialised materials developed for them during face-to-face teaching and learning. The above findings resonate with those of Favale *et al.* (2020), who assert that the lack of human touch, poor pedagogy and inadequate compatibility between the design of the content and the students' learning style can lead to frustration, confusion and lack of interest in the learning process.

The use of EST allowed for unpacking the complex interconnectedness of the influence, interactions and interrelationships between students who are differently abled and the multiple systems that disconnected these students from accessing online learning. As such, the inability to connect or (dis)connect to online learning is the by-product of the dynamism between the student and his ecological locale.

The use of the Ecological System Model during analysis brought to the fore the disabling practices of the University and the lecturers during the design of the online teaching and learning programme on the students' microsystem. These disabling practices not only isolate and silence students who are differently abled; they also hinder the cognitive development of students who are already differently abled.

Home-study Balance

Students who are differently abled faced many challenges with online learning during the lockdown period, as the closing of institutions deprived them of a conducive learning environment with assistive aids (Manzoor 2020). Students who are differently abled voiced their dissatisfaction at being at home in e-mails and WhatsApp messages to the teaching and learning office and the disability unit. Their reasons for being unable to participate in online learning are explicit in the excerpts below:

> *I vividly recall receiving an email from a differently abled student. It reads … my granny scolds me, sayings I'm disabled there is no need for me to study she expects me to do housework and oversee my aunties children and prepare meals for them. She thinks I am on holiday and the university is closed* (Photo-elicitation interview, S).

> *The house is so crowded and noisy, there is no space for me to study, I really wish I could be back on campus, can you please help me Miss then I will escape the chores, noise, and have a decent clean room to myself and I will be able to study using the assistive aids* (Photo-elicitation interview, R).

The multiple forms of exclusion from online learning as well as the multi-directional challenges that students with disabilities encounter daily in their home environment come to the fore via the above excerpts. It is obvious that, in spite of the flexibility associated with online learning, many differently abled students encounter time scarcity, as their time is manipulated and juggled with engaging in household chores, taking care of siblings, parents' lack of understanding that being at home during the lockdown means that the online academic programme continues. Time scarcity is a major factor that impacts the balance between online learning and family responsibilities. Furthermore, the home environment is not conducive to learning, leaving students feeling vulnerable. These are real challenges that students with disabilities are forced to cope with every day. At a theoretical level, EST unveils the macrosystem of the students' environment, the interaction and the influence of the norms, customs, cultural values of the society and how these impinge students' access to online learning.

Collaborative Ecosystems

When differently abled students are engaged in face-to-face learning on the university campus, their study, recreation, socialization, and family time are mutually exclusive because of the different spaces where each of these activities occur. Furthermore, they have different types of support available to them to help them cope. With the closure of universities, online learning has become the new normal. A major disadvantage of online learning for students who are differently abled is that they cannot turn to a neighbour for help or

raise a hand to ask a question; they cannot socialise or collaborate with their peers, and often parents are unable to assist them with academic queries. The lack of multiple forms of collaboration that extends across learning spaces leads to a strong sense of isolation and a dire need for support among students who are differently abled. In face-to-face teaching, as a teacher you can pick up on nonverbal cues: Are students bored or confused? You can observe the signals and adjust what you are doing. When students attend class at home, perplexing over your explanation of a complex concept, you are not there in real-time to allay their confusion, or to scaffold their thinking. The above sentiments were echoed during the photo-elicitation interview:

> *I wonder if we have flexed our pedagogies enough to include our diverse learners in our online teaching preparations. Based on my experience and the kinds of support we provide to our students, for many of them their success at university is dependent on the personal, consistent, face-to-face interaction with staff, students, and their support bases. Online teaching and learning reduce the likelihood of this interaction, it takes away this safety net that students depend on* (Photo-elicitation interview, A).

> *Where do they get support if not from us, how or what can we do to ensure they have some sort of support in their homes or communities. We must workshop parent and communities on how to support these students better, this will be our next step in our project* (Photo-elicitation interview, S).

The need and value for a safe collaborative support system for students who are differently abled, which extends across the university, home and community, is evident in the above excerpts. Tolu (2013) states that collaborative learning spaces also provide an environment where students who are differently abled can project themselves socially and emotionally. Our finding signals the need for safe collaborative spaces to extend from the university, home, and community in order to support students who are differently abled, and allow them to access online learning as well as experience success.

The use of the Ecological System Model at an analytical level highlights that students do not exist in isolation from the surrounding systems.

The lecturers, the curriculum, learning materials, modes of delivery, assessment, peers, parents, and community are all actors within the students' ecosystem that help to determine the success of differently abled students.

Concluding Remarks and Recommendations

In this manuscript we reflected on the challenges differently abled students encountered during online learning amidst the COVID-19 pandemic and lockdown. We proposed an ecological perspective for thinking about online learning for students who are differently abled. This perspective depicts learning as not linear or unidirectional, but rather as fluid, multidirectional and self-correcting occurring across different spaces within an ecosystem. Our findings support our initial argument for a more accessible, collaborative, inclusive approach to online learning for students who are differently abled. Our findings brought to the fore the multiple forms of exclusions students who are differently abled encountered as challenges when they engaged in online learning. Due to COVID 19, the exclusion gap became wider. For example, learning in their specialized environment on campus excludes them from the main lecture room and learning online in isolation and without interaction further excludes them from assistive devices and engaging with peers and lecturers, which creates a wider gap.

The use of the Ecological Systems Theory Model at a theoretical and analytical level allowed for the interaction between the students' development and the multiple systems within the social context to become conspicuous, thereby illuminating the bi and multidirectional influences of (f)actors within and across the layers (contexts) and the potential challenges students encountered with online learning. Neutralising the bi-and multidirectional influences within the students' ecosystem would eliminate the potential challenges students who are differently abled encounter. Some of the neutralisers would include providing technical training to students to embark on online learning, empowering academic staff with the pedagogies needed for online teaching, training academic staff to develop online course materials for differently abled students, but most important, to forge collaborations among the university, parents, and communities in which students who are differently abled reside. What we have learnt is that all students needed online learning support during COVID 19 pandemic such as data, laptops, etc. however students who are differently abled needed another layer of support like

assistive technology. A recommendation arising from this study is the need to explore how to create university, home, community collaborations to further support students who are differently abled.

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Social Work Field Instruction Supervision and Resilience during COVID-19 Lockdown

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Abstract

In Social Work education, field instruction is a component where students learn the practice of social work through delivering social work services to clients in non-profit organizations, government departments and community settings. Through the field instruction placements, students learn how to integrate theory into practice, to critically examine the knowledge, values, and principles of what they have theoretically learned in a lecture room. Therefore, proper preparation of social work students to enter practice is critical. It requires supervision by an experienced field instruction social worker of all processes and interventions undertaken by students during their field instruction practice. The role of field instruction in Social Work education is recognized as an integral part of students' learning and development. This chapter seeks to explore and describe how the COVID-19 pandemic has affected student social workers' training and what could be considered for the future of social-work field instruction training. As the researcher's endeavour to respond to these questions, she will base her discussions on her capacity as a former field instruction coordinator, observations, and experiences in engaging with students and their supervisors.

Subsequently, the researcher will highlight some of the strategies that emerged during the lockdown period to enhance the supervisory interaction, whilst ensuring quality field instruction supervision standards. Furthermore, this chapter envisages to unravel some strategies from which the institution of higher education offering the BSW degree can take lessons and strengthen and refine what works in different contexts, as well as share best practices.

Keywords: Resilience, coping strategies, field instruction coordinator, COVID-19

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Introduction

In this chapter, I explore how resilience in social-work field instruction training has come into play among all the parties involved during this COVID-19 lockdown. As a social worker, I will not be able to follow the format typical of this volume. I have no experiments or studies to report and no clinical recommendations. My interest is based on my experience and reflection as a former social-work field instruction coordinator at a South African university. Therefore, I respond to questions as stipulated in the journal of Alteration call, as my discipline is both empirical, conceptual, and normative – seeking to clarify the concepts that we use in our field to suggest ways how the program can be modified and how it can be taken forward in a structured way.

According to the Conversation, March 2020, scientists have known of the human coronavirus since the 1960s. However, only rarely has it garnered wider recognition over the past half century. One example was in 2003 when the severe acute respiratory syndrome coronavirus (SARS-CoV) caused an outbreak of the disease, Severe Acute Respiratory Syndrome (SARS) in mainland China and Hong Kong. Another was in 2012, when the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) led to an outbreak of the Middle East Respiratory Syndrome (MERS) in Saudi Arabia, the United Arab Emirates, and the Republic of Korea, among other countries.

In both cases, the coronaviruses were new to science. Happily, both outbreaks were contained thanks to a combination of human intervention and still unknown natural circumstances. In 2020, coronaviruses became a household name all over the world. Most people by now have heard of Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), or COVID-19, but some may not be aware that SARS-CoV-2 belongs to a family of viruses.

Field instruction in social training is a critical element from which students receive experiential learning and learn how to integrate theory into practice. Given the COVID-19 pandemic and the regulations by the government, some students may be deprived of this opportunity. The deprivation could be due to anxiety, lack of resources and access to agencies where the experiential learning could or should take place. Even though the institutions may come up with alternative methods to salvage the academic year, not every student will fully benefit, due to the previous inequalities.

In the previous decades, the world experienced various or outbreaks similar to COVID 19 in different continents and contexts. History tells us that,

even though there were fatalities, vaccines were developed to overcome or control the outbreaks. For the purpose of this chapter, the author will focus on the COVID-19 outbreak in South Africa.

Coronavirus in South Africa

On 31 December 2019, the World Health Organization (WHO) reported a cluster of pneumonia cases in Wuhan City, China. 'Severe Acute Respiratory Syndrome Coronavirus 2' (SARS-CoV-2) was confirmed as the causative agent of what we now know as 'Coronavirus Disease 2019' (COVID-19). Since then, the virus has spread to more than 100 countries, including South Africa. In the two diagrams, A depicts where the highest risk of community transmission is in South Africa, while diagram B depicts the trends in new cases. The author is aware that the statistics keep changing; however, the current and tables below reflect where SA was during the write-up of this chapter.

Southern African Higher Education Institutions and COVID-19

In African countries, approximately 9.8 million students at institutions of higher learning are experiencing a disruption to their studies due to COVID-19. In South Africa, students at public and private institutions were evacuated from campuses during the earlier phase of the virus. This was followed by the unintended closure of the institutions when the virus started to spread more rapidly.

South African Higher Education Institutions and COVID-19's Response

Noting the public health challenges posed by COVID-19 worldwide and the increasing positive cases locally, the South African government introduced measures to curb the spread of the virus in communities. On 15 March 2020, the President of South Africa declared a state of emergency. This included the temporary closure of schools, workplace, and travel restrictions. Individuals were also cautioned to adhere to strict public health measures such as regularly washing hands, and social isolating and distancing.

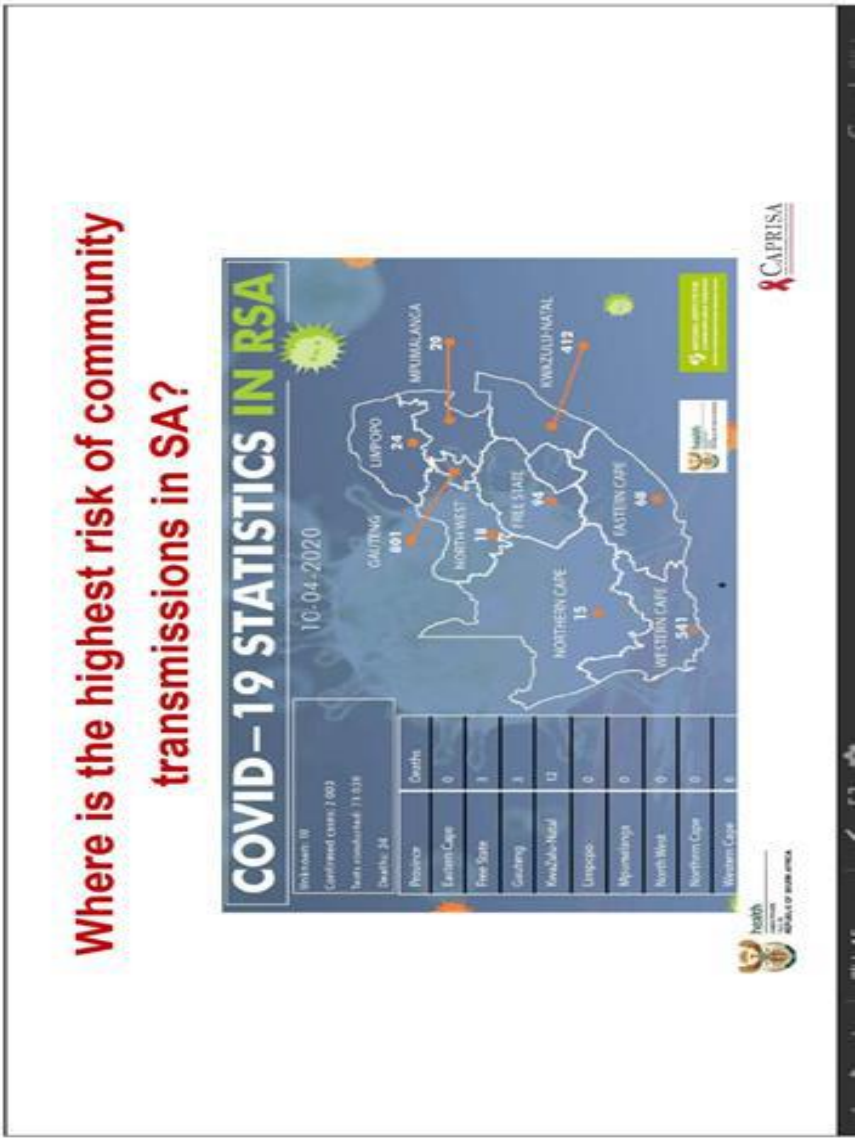


Diagram: A
Reference: SAcoronavirus.co.za

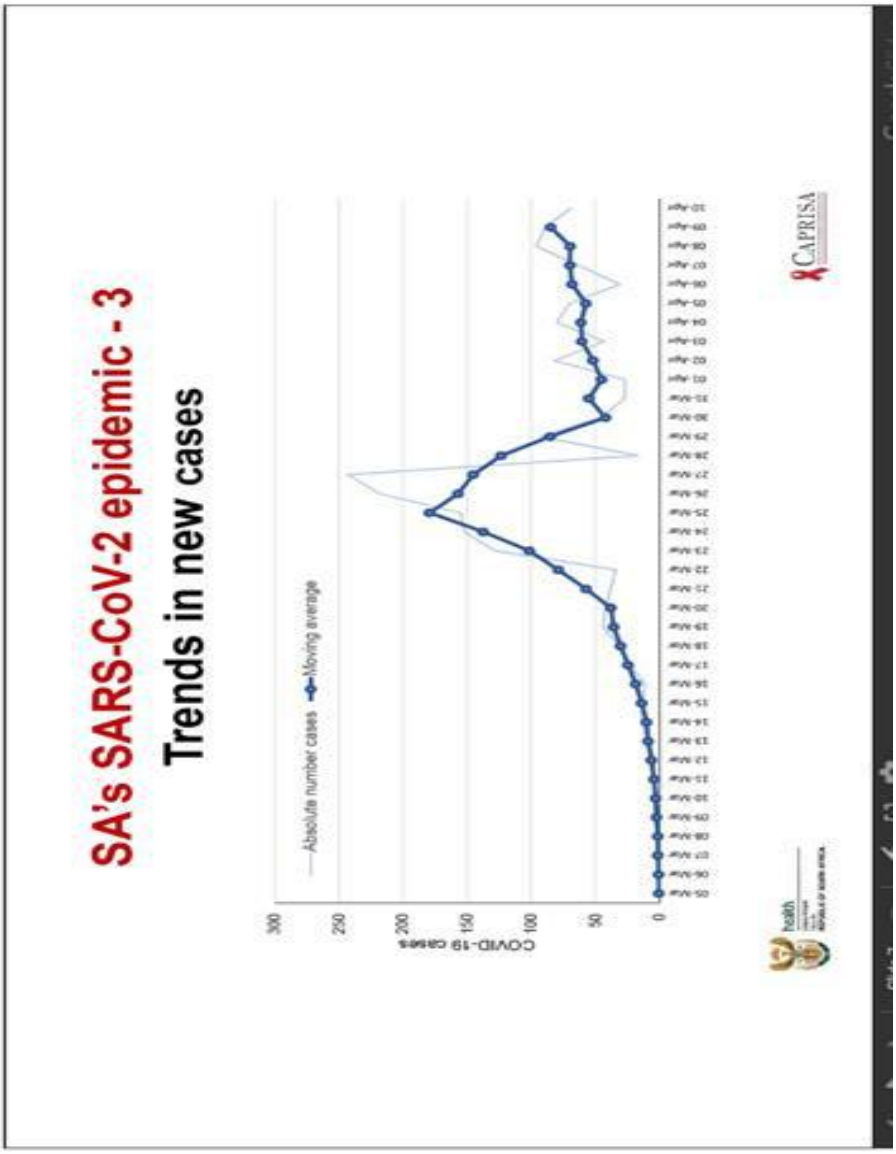


Diagram: B
Reference: SAcoronavirus.co.za

Due to the increasing spread of COVID-19, on 28 March 2020, a 21-day lockdown was introduced by the President of South Africa, which was extended by a further two weeks, ending on 30 April 2020. The introduction of the lockdown abruptly limited the operation of many sectors of the country. For example, institutions of higher learning had to close campuses to allow students to travel home. As the institutions had to close, scheduled laboratory work and field practice for students had to be suspended and, in some cases, certain field practice settings possibly becoming unavailable to our students post the lockdown. Since vice-chancellors had received a joint briefing on the COVID-19 virus from the National Institute of Communicable Diseases (NICD) on 19 February, they sprang into action, gearing up their institutions for a concerted response when the epidemic arrived on their campuses. With the number of confirmed cases tallying at 1,460 in South Africa (as of 2 April 2020) and with the presence of COVID-19 now confirmed in all provinces of the Republic, the arrival of this pandemic at all university campuses proved more imminent than ever (https://www.usaf.ac.za/universities-coronavirus-covid-19-updates/). Now that we are in a national lockdown, our member institutions are rigorously preparing and psyching their communities up for virtual teaching and learning in the quest to salvage the 2020 academic year.
In March 2020, a new pronouncement was made by the Minister of Higher Education … the re-opening of universities also had to be included.

To that end, some shared available resources, while others offered online skills training in this regard (https://www.usaf.ac.za/universities-coronavirus-covid-19-updates/).

Conceptual Framework

The World Health Organization (WHO) defines and reports the Coronavirus as a cluster of pneumonia cases, Severe Acute Respiratory Syndrome Coronavirus 2, now known as Coronavirus Disease 2019 (COVID-19).

Definition of Key Concepts

Field Instruction Definition

In social work, field instruction, which is sometimes referred to as practicum, is an experience that requires the practical application of a theory or conceptual knowledge in context (Garthwait 2011:2) For this chapter, ‘practicum’ and ‘field instruction’ are used interchangeably.

Resilience

This refers to an individual's ability to overcome, learn from, and adapt positively to adverse events (Riley & Masten 2005). Essentially, to study resilience is to identify ways in which individuals and communities withstand adversity through individual and collective strengths, resources, and capabilities (Panter-Brick *et al.* 2018). Community resilience refers to the ability of groups of people to respond to and recover from adverse situations, such as natural disasters, acts of violence, economic hardship, and other challenges to their community. In the context of this chapter, the focus is on resilience and COVID19, social work field instruction and institutions of higher learning.

An Overview of Social Work Field Instruction in South Africa

Social work education in South Africa is regulated by the South African Council for Social Services Professions (SACSSP) and the Council of Higher Education (CHE). Since 2007, all providers of social work education had to offer a four-year undergraduate BSW, which consisted of 27 exit-level outcomes up until the recent move to social work standards with consolidated the Field instruction exit learning outcomes approved by the National Standards Bodies (NSBs) and the South African Qualifications Authority. . Field instruction sites are considered critical, as they need to demonstrate their competency as an enabling environment for the student learning environment. According to Simpson and Raninga (2014), student supervision brings together two main areas, namely the educational component that influences the experiences of the students at the university and their academic requirements, and the welfare context that impacts the type of placements available for students and their experiences in the field. Raniga (2012) postulates that a major concern of social work academics is the need to balance students' learning opportunities for the completion of the academic requirements, while at the same time students need adequate supervisory support amid strained budgets and human resources. Furthermore, the massification of social work training in South Africa due to the provision of bursaries and scholarships, and the migration of social workers from the NGO sector to the government sector are also noted as affecting students' field instruction placement. Lombard (2008, in Engelbrecht 2014:176) points out that both NGOs and the government experience human resource capacity challenges, with subsidy cuts. It is the same NGOs that has borne the brunt of the crisis on social service

delivery, as most of social work students are placed within these agencies. The subsidy cuts and COVID-19 posed a double challenge, as the NGOs had to provide services under stringent conditions.

South African Council for Social Services Professions

The South African Council for Social Service Professions (SACSSP/Council) is a statutory body established in terms of section 2 of the Social Service Professions Act 110 of 1978 (the Act). Based on the Act's provisions, the Council's comprehensive role is to be the determining, guiding and directing authority body within the structure of social service professions in South Africa. The Council fulfils this role by setting the standards for education and training of practitioners and by taking policy resolutions as guidelines for the practising of the social service professions under its auspices. The Council has two Professional Boards under its auspices, namely the Professional Board for Social Work and the Professional Board for Child and Youth Care Work.

The Social Service Professions Act 110 of 1978 require of institutions of higher learning to register students studying towards social work qualifications with the Council. This is done to regulate students' training and performance, and the quality of training offered by the institutions. However, in the light of the pandemic this process could be compromised, where students might somehow be ill-prepared due to inadequate experiential learning. Thus, new terms or standard agreements would need to be considered in order to maintain quality training and completion of the degree.

Resilience, Teaching and Learning, Field Instruction Supervision during COVID-19

The pandemic has become a threat to the health and wellbeing of the world population. Its global pandemic nature has the potential to destabilise systems and processes that have defined human existence, epistemology, and knowledge. New ways of thinking, new responses to systems and processes, new boundaries and new teaching modalities are being formed as a result of this rapidly spreading disease. In response to the disruption to higher education, more specifically in South Africa, one needs to, or has tapped into alternative modes of coping. Previous studies on resilience mostly focused on the psychosocial traits of individuals (Brodsky *et al.* 2011). However, varying determinants of resiliency exist across individuals, cultures and social

environments (Ungar 2008). Traditional psychological research on resilience does not investigate the role of socio-political contexts, history and culture sufficiently in its analyses (Eggerman & Panter-Brick 2010), which is crucial in academia. Resilience has historically been viewed as a collective cluster of protective factors that arise from an individual's genetic makeup (Henderson 1998). Research evolved our understanding of the phenomenon, and it is now recognized that some protective factors can be learned by individuals in the face of adversity (Edward & Warelow 2005). Resilience may manifest through various protective factors that are both inherent and learned. Socioecological processes of resilience acknowledge the interaction of an individual's ability with the social, physical, and political environments that can promote or hinder the use of those abilities (Ungar 2012). The converging interaction of individuals with their social and physical ecologies can shape an individual's resilience in the face of extreme stressors (Harvey *et al.* 2003).

Studies on social work field instruction have generally considered resilience as one of the protective factors that test the balance on students ability to integrate theory into practice with little research focused on understanding how resilience comes into play for all stakeholders involved in training the students, namely field instruction coordinators (FI), institutions agencies and supervisors. Moreover, FI coordinators have a complex set of experiences, which gives meaning to the process rather than the traits of resilience (Lenette, Brough & Cox 2013). Therefore, we need to avoid associating resilience as a present or absent dichotomy (Ungar 2008) when studying field instruction and supervision in social work. Instead, studies should explore the process of resilience as it unfolds within field instruction course. Students, FI coordinators and agencies experience and consider the heterogeneous process of resilience (Ungar 2012), including interactions between the individual and the environment. Thus, it is critical to understand how they display and utilize resilience across different social and physical ecologies. The playing field is indeed uneven and whilst many in society and our community enjoy greater levels of privilege, the consequences of the pandemic have illuminated and amplified the existing inequalities in our society – with the poor, marginal, precarious, and under-resourced disproportionately experiencing its fallout. The emergency remote teaching and learning plan must take into consideration the different learning environments of our students and their access to learning resources, appropriate devices, and data.

Resilience in Relation to Communities and Students

COVID 19 and the regulations that were implemented impacted several entities, communities, families and individuals. Norris *et al.* (2008:131) define community resilience as 'a process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance'. Furthermore, in a recent literature review on resilience, Castleden *et al.* (2011:370) define community resilience as 'a capability (or process) of a community adapting and functioning in the face of disturbance'.

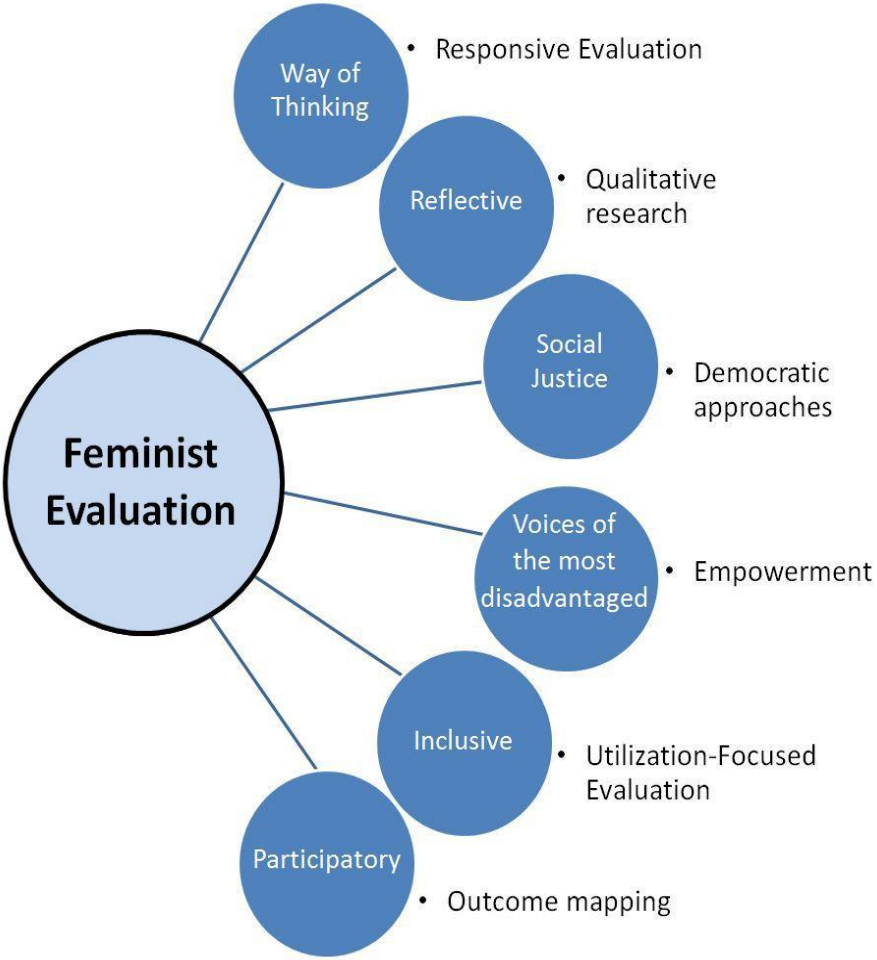
The concept of 'community resilience' is almost invariably viewed as positive, being associated with increasing local capacity, social support and resources, and decreasing risks of miscommunication and trauma. Yet consensus as to what community resilience is, how it should be defined and what its core characteristics are does not appear to have been reached, with mixed definitions appearing in the scientific literature, policies and practice. For the purpose of this chapter the definition by Norris *et al*. is considered more appropriate within the context of the COVID 19 pandemic. Communities had to adapt to a new normal, namely social distancing, in order to enable normal functioning. They had to devise new methods of connecting with their loved ones, friends and extended families.

To ensure that no-one is left behind or discriminated against, students, student organisations, academics and institutions of higher learning had to engage in developing new strategies to enhance teaching and learning, salvage the year and achieve the annual goals. Resources and logistics were put in place, and sustainability in terms of institutional responses is one of the matters to be looked at going forward.

A Shift from a Traditional Field Instruction to a more Context and Developmental Approach

Theoretical Framework

Feminist evaluation is based on feminist research, which in turn is based on feminist theory.



Feminist Partnership Model and the Interactional Process Model, adapted from Podems and Negroustoueva (2016).

Discussion

The chapter sought to examine and critique literature on the role of resilience in social-work field instruction supervision during the COVID-19 lockdown. The reflection allows a glimpse of how adversity can become a way of life for students and teachers. Stressors during the COVID-19 lockdown covered

multiple areas and varied in depth and impact. Academic concerns served as stressors and were exacerbated by stress. However, COVID-19 demonstrates the mitigating effects of resilience. Teachers and students' ability to cope with multiple stressors, their efforts to turn the experiences into lessons and opportunities to remain focused, and the ability to achieve a degree of normalcy in one's life (through educational pursuits), regardless of the situation in which COVID-19 places one, serves as an example of the role resilience can play in teachers and students' lives.

This chapter is underpinned by (i) the higher education context in South Africa during the COVID 19 pandemic; and (ii) the SW as a professional degree and what needed to be modified or transformed within Social Work field instruction is described. I will approach this by answering the much-needed 'Wh' questions; why, who, what, when and how.

Question One

How have institutions responded to the institutional closures and the protection of the integrity of what is being taught, learned and assessed across programmes in the Humanities?

In the quest to preserve their academic integrity and save students' lives, the institutions had to implement strategies to protect their integrity. For example, there was an early recess strategy, introducing synchronous or online teaching, rethinking and refining student assessment methods. Other University Centers for Teaching and Learning had to assist academics with different online learning and teaching tools to ensure that learning continues remotely. However, aspects of what the cost implication was going to be for students were not adequately addressed. Cost needed to consider both local and international students. As a result, those who could not afford to immediately vacate the residences had to negotiate, while at the same being at risk of staying with their basic needs not adequately met. Therefore, being away from families or support systems could led to continual anxiety and panic.

Question Two

What might the curriculum within the Humanities programmes look like in the immediate and longer term, post this pandemic disease period?

The pandemic necessitated a collective effort by different stakeholders, namely NGOs, CBOs, Faith Organisations and Government Departments. For instance, the institutions of higher learning and the Department of Higher

Education in this instance will have to collaborate with the Council in Higher Education (CHE), governing bodies, student bodies and communities to craft the re-designed curriculum and make it suitable for the current situation, without jeopardising the students and the quality of training. In doing so, the parties need to acknowledge the demographics and socio-economic disparities of the students and teachers. In my discipline, which is social work, all the strategies are to be implemented aiming at ensuring that BSW students meet the basic criteria and competencies for field practice, as stipulated in the CHE BSW Standards, (2004) as well as the SACSSP BSW Norms and Standards, (2016) documents. In limiting direct human contact and maintaining social distance, some consultations have been moved to online spaces. For example, students receive mentorship and supervision online.

Also, to keep up with social work education standards, students had to continue working with clients remotely (sessions are recorded for supervision purposes). I argue that this will vary across the levels of study and the students/s context and have cost implications.

Problematisation

To date, empirical research has not examined the alternative modalities in teaching field instruction, especially in African countries or previously disadvantaged countries, which include South Africa. However, several promising context-relevant alternatives had to be thought to ensure a triparty benefit, namely students, teachers, and governing bodies. First, there was a compelling need to face the socio-economic disparities of our students and teachers; the notion of the haves and have not became visible. The diagram on page 212 depicts the demographics where the highest risk-transmission community is. The diagram further reflects the socio-economic disparities, where most community members struggle to access healthcare services. Students from these communities would often be the first ones to have gone to university, and their home conditions may not have access to any internet. They might even experience a struggle to pay the varsity fees. Therefore, the discussions and the deliberations had to ensure that the training standard in the Humanities is not or will not be compromised as stipulated by different governing bodies per discipline. What this means is that collaborations and networking, skills sharing, distribution of resources and some degree of flexibility were to be utilized. Evidence for such activities called for resilience of each party involved.

The period of the pandemic has been an opportunity to reflect on our losses, which include the value of face-to-face engagements, freedom of movement, security, and comfort. However, there were some gains, for instance, the need to strengthen collaborative relations, facing the realities of life and strengthening interdependence.

Opportunities for New Insights and Responses to Infectious Diseases, especially COVID-19, that Confront the Humanities Curriculum within Undergraduate and Postgraduate Programs

New Directions are Needed in Teaching and the 4IR

Optimal progress in introducing the 4IR in developing countries is scanty, as was proven by the COVID-19 pandemic. The relationship between online teaching and learning in various contexts will require multimethod, interdisciplinary approaches to research. In recommending multiple methods, q ualitative research strategies could start with ethnographic fieldwork studies with various groups, using interviews and observational methods to gain thick descriptions of online teaching, resources, and access for both students and lecturers. These research strategies could employ the paradigms of cultural teaching and indigenous teaching that value local knowledge and bottom-up model building (Kim, Park & Park 2000). Quantitative studies could investigate indigenous definitions of online teaching and the specific tools used to generate teaching and learning. Collaborative, action-research approaches should be utilized, particularly with underserved populations.

Sustainability on New Insights and Responses to Infectious Diseases, especially COVID-19

Most institutions of higher learning have introduced several interventions or measures in the quest to continue with the academic programme. However, one wonders about the sustainability of the measures in view of the inherited inequalities. These measures include, (i) Zero-rating webpages; (ii) Providing data and airtime; and (iii) The provision of laptops on a loan basis. Should the infections by the virus continue at this scale, the question is whether the universities will be able to sustain interventions related to these measures.

Some reflections on the need for universities to move most of their

postgraduate courses to online platforms can also be interesting. Most postgraduate courses at some universities still require direct contact and it is assumed that they are badly affected by the pandemic. I mention postgraduate courses because students at this level of study do not require nurturing like undergraduate students.

Study Implications

Considering that not all resiliencies are inherent and some protective factors can be learned, supporting vulnerable groups can constructively affect their mental health. Support can take several forms. While providing mental health support services to cope with pre- and post-FI stressors and trauma is of paramount importance, another application to social work practice can be to create opportunities for FI coordinators to become more IT savvy and engaged. This may help reduce the incidence of a panic mode and feeling ill-equipped in relation to mental health issues. The author's involvement in the field instruction module challenges was a significant mood enhancer and focused at finding possible solutions while she was seeking help for her overwhelming environment as the Head of Department in Social Work. In doing so, she was not only able to find help, but also identified the needs of others in the same space.

Limitation

Due to the perceived subjective nature of reflective methods, I acknowledge my own potential biases in the construction of this chapter. It is also important to note that my reflection was constructed retrospectively and represents a combination of how I remember past events, as well as my interpretations of these events. However, the goal of reflective research is not to control subjectivity (Greenhalgh *et al.* 2005), but to interpret the story appropriately, which can be achieved by restoring and co-constructing stories with the participants.

Conclusion

My reflection provides a rich illustration of several challenges that multiple parties may face through the COVID-19 period and the academic year. This chapter highlights how students and teachers are subjected to varying intersecting challenges and the need to support them by humanizing their experiences and providing them with culturally relevant resources.

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Supporting Research at South African Universities during the COVID-19 Crisis: Key Areas for Consideration and Critical Reflections on Responses with a Focus on Postgraduate Education

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Abstract

Research is key to inform evidence-based practices and responses. The need for research to address the COVID-19 impacts and inform sustainable interventions has emerged as a critical component of the response to this global threat. There is also growing recognition that the current context provides both opportunities and challenges for research efforts at universities, including postgraduate education. This chapter draws on a desktop study of university responses to the COVID-19 crisis to establish how institutions are providing administrative and systems-orientated support to ensure the continuation of research, the varied research responses to the COVID-19 threat itself, and key emerging best practice approaches that are likely to change the modes and modalities of research training. Additionally, qualitative research is employed

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to reflect critically on the authors' experiences (as a component of self-ethnography) from the varied perspectives of research management and leadership, supervision and being postgraduate students. Key aspects that are examined in this chapter include process and procedural changes, the capacity and ability to provide administrative support, ethical issues and protocols, financial and resource considerations (including access to funds, library materials, etc.), training support (including accessibility to supervisors and internet-based online training materials), and disciplinary-specific sensitivities (that is, different approaches and challenges in relation to lab-based, field-based and desktop based research).

Keywords: COVID-19 pandemic, postgraduate education, supervision, resource access, administrative support, South Africa

Introduction

'Business unusual' and the 'new normal' are key terminologies that have been used to describe the prevailing contexts as the world grapples to deal with the COVID-19 pandemic. Universities throughout the world have not been exempt from the widespread disruptions associated with unprecedented and sweeping changes to curb the spread of the virus associated with the physical closure of universities. Mohamedbhai (2020) states that at a time when Africa is investing substantial efforts to transform and improve higher education on the continent, there is a danger that the impact of the COVID-19 pandemic will destabilise the sector with severe consequences. The higher education sector globally is highly differentiated, and more so in South Africa, where the legacies of apartheid and persistent inequalities remain prevalent. There is general agreement that the pandemic in many ways is reinforcing and exacerbating challenges and inequalities that need to be addressed.

Understandably, given the large numbers of students in this cohort as well as the lack of preparedness to study independently and access resources, universities have tended to focus more of their energies on undergraduate students compared to postgraduate students. Particular emphasis has been on shifting to online/remote teaching, making learning materials available to students and unpacking ways to assess and evaluate student progress. Research generally and the training of postgraduate students are explicitly important to inform evidence-based practices and responses to the range of societal

challenges, including the COVID-19 pandemic, which requires the highest level of scientific investigation on the virus itself as well as its multiple impacts and responses. There is widespread consensus that science (including all disciplinary areas and fields of research, including the Humanities and Social Sciences) will play a critical role in dealing with the pandemic. The need for continued research in a variety of fields is critically important, since the COVID-19 pandemic does not mean that other challenges faced are put on hold. Supporting research (including postgraduate studies) is therefore an important aspect to consider in the wake of dealing with the unprecedented COVID-19 pandemic.

In this context, the chapter examines opportunities and challenges concerning efforts and collaboration to support postgraduate education and research in South Africa's university sector to address the disruptions associated with the COVID-19 pandemic. The methodological approach adopted primarily draws on a desktop examination of South African university responses to address postgraduate education issues. Additionally, qualitative research is employed to reflect critically on the authors' experiences (as a component of self-ethnography) from the varied perspectives of research management and leadership, supervision and being postgraduate students. Two of the authors are academics involved in postgraduate supervision and training, with one being a Dean of Research. Another two of the authors are postgraduate students who completed their master's degrees and are currently applying to continue with their doctoral studies. The next section provides a brief overview of the South African postgraduate context. This is followed by an examination of the interventions/changes discernible to support postgraduates to deal with the disruptions caused by the COVID-19 pandemic. Thereafter, reflections are undertaken in relation to key aspects including collaboration opportunities, dealing with administrative challenges, sensitivity to student differences, accessing online resources and quality of research. Finally, concluding remarks are forwarded.

The South African Postgraduate Context

The training of postgraduate students is undertaken in an environment where the National Development Plan 2020 (National Planning Commission – NPC 2013:317) summarises the higher education system as facing a number of challenges characterised by high levels of inefficiencies:

> The data on the quality of university education are disturbing. South African universities are **mid-level performers** in terms of knowledge production, with **low participation**, **high attrition rates** and **insufficient capacity** to produce the required levels of skills. They are still characterised by **historical inequities and distortions**. The university sector is under considerable strain. Enrolments have almost doubled in 18 years, yet the **funding** has not kept up, resulting in **slow growth in the number of university lecturers**, **inadequate student accommodation**, **creaking university infrastructure and equipment shortages**. The number of institutions that have recently been put **under administration** is an indication of the leadership and governance challenges.

There are substantial numbers of postgraduate students at South Africa's universities. The latest available statistics indicate that in 2018, 1,085,568 students were enrolled in public higher education institutions in South Africa with only a few students (197,898) enrolled at private institutions (DHET 2020a). Of the total number of students, 61,096 (5.6% of total) and 23,650 (2.2% of total) were registered for master's and doctoral degrees, respectively. These students were mainly registered at South Africa's public universities. Additionally, DHET (2020a) indicates that the majority of the 2019 enrolments were through contact mode (63.1%), with 36.9% of students enrolled through the distance mode of learning. The COVID-19 pandemic has forced all institutions to transition to online/remote learning modes of teaching and learning, which includes supervision and support for postgraduate students.

Cloete (2016:5) asserts that 'South Africa has the most diverse and differentiated higher education system in Africa'. There are substantial differences in the system in relation to:

- Student enrolments and backgrounds, including the level of preparedness of students
- Research outputs (including the number and graduation/ throughput rates of masters and doctoral students)
- Amounts and sources of external funding
- University infrastructure and resources, including Information and Communication Technology (ICT) capacity and library resources
- The number and competencies of supervisors: For example, in the

> South African public universities, in 2018 only 48% of academics had PhDs ranging from 69.6% at the University of Pretoria to 13.2% at Walter Sisulu University (DHET 2020b).

Additionally, the majority of students in South Africa come from poor backgrounds. These inequalities within the sector and among students are reinforced by the digital divide which, as Mohamedbhai (2020) argues, has emerged as critically important, as higher education institutions across the continent have had no option but to deliver their academic programmes online. These differences are reinforced by high levels of inequalities in the system (reflective of society as a whole) and responses to the COVID-19 pandemic.

Cloete *et al*'s (2015) assessment of the progress of the 2001 cohort of master's graduates to doctoral graduates in South Africa over 12 years reveal a 'leaky pipeline'. Of the 6,613 master's students who graduated in 2011, 1,061 registered for doctoral studies within five years of completing their master's. Among this group, 417 graduated with doctoral degrees within seven years. Additionally, Cloete *et al.* (2015) show that dropout or non-completion rates differed in relation to the field of study, with the highest proportion of students graduating in the Natural and Health Sciences (53%) and the lowest proportion in Business, Economics and Management (37%). Relevant for this chapter is the proportions for Humanities and Arts (49%), Social Sciences (46%) and Education (44%). The statistics presented by Cloete *et al.* (2015) are indicative of the challenges in postgraduate supervision and differences among and within universities in South Africa.

Postgraduate studies and research outputs more generally are also extremely important sources of funding for South African universities, as noted by Styger, Van Vuuren & Hymans (2015). They assert that institutional grants allocated in relation to research outputs (including postgraduate completion) are crucial to the financial stability of South African universities that tend to rely heavily on public funding. Also, postgraduate research funding comes primarily from two sources: external (statutory funding from the National Research Foundation - NRF) and funding leveraged by supervisors. Funding for postgraduate research is often accessed on a competitive basis. Mohamedbhai (2020) warns that Africa relies heavily on international funding sources to support research (thereby supporting postgraduate education) and as countries globally enter recessions, funding is likely to be limited, which will severely impact on the types and quality of research undertaken on the continent.

Interventions/Changes Discernible to Support Postgraduate Students during the COVID-19 Pandemic Disruptions

A range of responses to deal with COVID-19 pandemic related disruptions are examined in this section. These reveal efforts by universities to attempt to address the needs of postgraduate students and provide support to both students and supervisors.

Process and Procedural Changes

Universities are looking into and have changed processes and procedures in relation to administering and supervising postgraduate students in response to the disruptions caused by the COVID-19 pandemic. Changes and relaxations that may have to be made within universities are in relation to postgraduate student admissions, progression and the awarding of degrees. For example, most universities award *cum laude* and *summa cum laude* degrees based on completing the degree in stipulated minimum times. Given that the current disruptions encountered (which are impeding data collection, interaction with supervisors and other research-related activities) are of no fault of the students, allowances need to be made to ensure that students are not unfairly disadvantaged. Rethinking timeframes for the completion of degrees is also important at universities such as the University of KwaZulu-Natal (UKZN) that has fee remission for full-time, research-based postgraduate students. Master's and doctoral students are expected to pay fees if they exceed a year and three years, respectively. These timelines need to be revised to suspend or waive semesters that have been severely disrupted by the pandemic. Student-specific research topics should also be considered, since some, as will be discussed later, can be severely impacted, while others may benefit from the lockdown, depending on the nature of the study and the stage of the research. Generic or 'one-size-fits-all' policies and procedural changes may, therefore, be highly problematic.

In relation to postgraduate research, severe disruptions were immediately felt, even prior to 27 March 2020, when the lockdown was pronounced by President Cyril Ramaphosa, and when Higher Education Minister Blade Nzimande announced on 20 March 2020 that universities needed to shut down. Lab and field-based research not directly linked to COVID-19 essential studies ceased immediately and remains compromised. Many universities communicated these decisions to supervisors and students,

even guiding them to rethink protocols for year-long research projects (such as honours and master's projects) to focus on desktop studies. The extent to which supervisors and students have adjusted to the disruptions needs further investigations. However, there has been an increase in desktop research and social science studies where data collection is confined to online surveys. This assertion is based on our experience and interactions with researchers as well as calls to participate in online surveys.

In South Africa, research ethical processes and guidelines were put together by the Research Ethics Support in COVID-19 Pandemic (RESCOP), an informal grouping of Research Ethics Chairs (RECs) from different universities. Ethics committees generally have prepared for the physical closure of universities and the national lockdown. RECs have remained committed to ensuring that, where possible, the processing and ethics approval of research protocols continue and that online administrative support is provided, as required. Universities have also informed postgraduate students and supervisors that face-to-face/physical contact (including field-based) and lab-based research is suspended except COVID-19 and other essential approved research protocols during the period of the lockdown and while social distancing requirements are in place. The suspension applies to research applications that have already been approved and the resultant impact is that for several postgraduate students, their research has prematurely ceased. At some universities, supervisors and postgraduate students have been advised by the RECs to review their methodological approaches and they reassured the research community that amendments to protocols will be processed expeditiously. Depending on how long the disruptions persist, some students may need to change their topics completely.

Most universities have also cancelled, postponed or are considering virtual graduation ceremonies, since social distancing norms negate the format of the traditional ceremonies. It is interesting to note that initially some students resisted this decision, but as the seriousness of the health crisis became evident, there is general acceptance that graduation ceremonies are highly risky. Universities have reassured students that degrees will be awarded without the ceremonial graduation event.

As will be discussed later, challenges that remain and systems that need to be improved, are related to administrative support that can ensure effective change management, as well as communication with students and supervisors.

Supervision and Postgraduate Students Training and Capacity Development

Cloete *et al.* (2015) centralise the role of the supervisor in doctoral production in South Africa to ensure growth, quality, efficiency and transformation. As indicated earlier, the South African higher education sector has serious challenges. Supervision capacity has been highlighted by King (2018) as a key factor that influences the number of students that graduate timeously (or at all) as well as the quality of the postgraduate training in the country. Mutula (2011) states that some universities in South Africa are characterised by a scarcity of research expertise, inexperienced supervisors, and supervisors working in fields that differ from their specialisations, which frustrates students and has an impact on postgraduate research outputs and quality. The quality and/ or preparedness of postgraduate students in South Africa has also been noted as an area of concern by some researchers (Cloete *et al.* 2015; Mutula 2011). The combination of underprepared students and inexperienced/ inadequately qualified supervisors pose challenges that impact on the success rates, as indicated earlier.

Thus far, insufficient attention has been paid to supervisor capacity, except to generally provide online training that focuses on the push to prepare academics to train students online. However, Mohamedbhai (2020) cautions that online delivery impacts on the quality of training, since it requires that 'teaching material is prepared by a professional instructional designer, that the lecturer is pedagogically trained for delivering the programme and the students are equally exposed to the pedagogy of online learning'. Some universities use University Capacity Development Grant (UCDP) funding to provide training to improve supervision (focusing on aspects such as good supervisory approaches/models, research ethical considerations, what constitutes master's and doctoral research, research proposal development, monitoring student progress, etc.), article writing virtual workshops and the use of quantitative and qualitative software packages. It is important to note that some are offered by teams at specific universities on a fee basis, which reflects the national need to undertake this level of training at institutions where this level of training capacity is either limited or non-existent. Additionally, universities are offering online training support directly to postgraduate students in relation to several critical areas, including proposal writing, academic/scientific writing, quantitative and qualitative software packages, etc.

Online platforms such as Zoom, Vidyo and Microsoft Teams have emerged as important virtual 'spaces' for students and supervisors to meet and interact with one another. While several universities in South Africa have shifted to online learning and reassured students that the 2020 academic year will be concluded, others have yet to start or have the majority of programmes online. For example, Khumalo (2020) reports that while several universities have proceeded with resuming their academic programme online, the University of Zululand has warned students that the 2020 academic year may go into 2021, primarily as a result of the institution needing to ramp up e-Learning provision capacity and the low online participation rate among students, because many reside in rural areas. It is also important to note that many universities in Africa generally do not have the capacity to offer all classes online, as noted by Mohamedbhai (2020). The state of readiness reflects the type of university, specifically in relation to distance learning orientation prior to the COVID-19 pandemic disruptions, and whether universities were historically advantaged or disadvantaged during the apartheid era. Universities that had already embraced distance learning are proving to be more resilient and effective in dealing with the current crisis. This is understandable, since universities have the expertise and infrastructure to transition more easily to online learning. Unsurprisingly, historically advantaged universities have better infrastructure, smaller class sizes, more qualified academics and more students from historically advantaged backgrounds, which imply that more students will have the required resources (internet connectivity and laptops) for online learning.

Financial and Resource Considerations

Funding agencies and bodies have extended funding for postgraduate students and research, noting that research in many cases (especially lab and field-based research) has been placed on hold, affecting the proposed timeframes for the completion of the research. Agencies may also need to reconsider how funding can be used. For example, the NRF does not permit funding to be used to purchase laptops, but the current context makes accessibility to laptops an essential research item.

Khumalo (2020) notes that the more established and more prominent research universities such as the University of the Witwatersrand, Stellenbosch University, University of Cape Town, University of Pretoria and University of

KwaZulu-Natal were able to secure deals with big companies so that students could access data for free and create schemes to permit students to access the necessary hardware for online learning. As insiders at the universities, it needs to be noted that even the established universities are facing challenges with online learning, and not all academic programmes are online. Many students experience challenges to participate in online learning.

In the South African context, an important consideration is also that a large percentage of postgraduate students are foreign students, many of whom returned home when accommodation facilities were closed. Specifically, DHET (2020a) reports that 10,276 master's students (17% of the total master's enrolment) and 9,415 doctoral students (40% of the total doctoral enrolment) were international students, mainly from other African countries. Despite these large numbers and proportions of students, there does not appear to be institutional strategies to engage with these students in a targeted manner. Additionally, if universities open before travel restrictions are uplifted, foreign students will struggle to re-enter the country timeously.

The assumption that postgraduate students have internet connectivity, funds to acquire data and laptops is problematic in relation to many students, especially those from historically disadvantaged backgrounds. Most universities have embraced the principle of 'leave no-one behind'. If the challenges that students face are not addressed, many will be left behind. Universities are awakening to the stark reality that the prolonged disruptions will have severe impacts, and the high levels of unpredictability will result in tentative planning at best. The ethos is changing to support as many students as is practical and possible (given the infrastructural and access challenges faced) so that they can progress with their studies and have concurrent strategies to assist those who may be unable to continue with their studies. Many universities have also provided opportunities for undergraduate and postgraduate students to suspend their studies with no costs.

Financially, universities are also dealing with how to process postgraduate fees, given that many students were unable to finalise their registration prior to the disruptions, and several are unable to access resources and/or supervisors. Universities will, therefore, be ethically obliged to extend the time permitted for students to complete their degrees without additional fees. Communicating clear decisions on this matter may also assist in easing some of the stress students are likely to endure as they contemplate dealing with the financial pressures of the disruptions. Of concern also is that

postgraduate research funding is likely to shrink as resources globally shift to fight the virus and health impacts. Funding priorities will also be geared towards dealing with the direct (especially far-reaching economic) impacts of the disruptions associated with the pandemic that include severe travel restrictions (with the airline industry almost halting to a standstill), closure of businesses and increases in unemployment rates and job losses.

Reflections

Opportunities for National and International Collaboration

It is important to note that several aspects discussed above have components that reflect collaboration at different levels. For example, libraries are working closely with peers nationally and globally engaging with publishers to access academic publications at no or reduced costs.

The ethical review protocol processes for COVID-19 research and research more generally (which impact directly on postgraduate students and supervisors) reveal the collaborative potential at national and international levels. Nationally, several biomedical and social science RECs Chairs worked together informally to formulate guidelines and share best practices and documents via a support group called RESCOP referred to earlier. RESCOP aims to provide support and advice while complying with national laws, regulations and statutory guidelines. Internationally, the World Health Organisation (WHO) has worked regionally to provide guidance and ensure that research integrity is maintained at the highest levels. Specifically, WHO Africa (2020) facilitated fora for national regulatory authorities and national ethics committees from Africa to draw on expertise to expedite clinical trial reviews and approvals while respecting the independence and authority of bodies in countries to grant reviews. The collaboration in South Africa has extended to the humanities and social science research as well.

WHO Africa (2020) comments that the impacts of the COVID-19 pandemic have revealed the complexity of biomedical research, which can extend to all types of research as well, including research in the humanities and social sciences. This, WHO Africa (2020) asserts, requires increased cooperation between different partners and stakeholders, including ethics committees, researchers, donors and governmental regulators. While several challenges are experienced, opportunities exist for exciting and multidisciplinary research that postgraduates can benefit from, given that there is

consensus that the pandemic affects every aspect of life. Thus, different disciplinary and methodological lenses are required to unpack the multitude of impacts and guide evidence-based interventions and strategies. Furthermore, new types of research skills may be needed, and the postgraduate sector needs to respond appropriately to train a new generation of research to respond to the current situation and ensure that the future world is pandemic resilient.

COVID-19 is not the first pandemic that the world has experienced. Key lessons from the 1917-1918 Spanish Flu pandemic, which coincided with World War I is that political decisions and lack of coordinated efforts aggravated the reach and impacts of the disease (Cotter 2020). Furthermore, Cotter (2020) raises an important lesson that armed conflict substantially undermined efforts to deal with the Flu. South African universities need to pay attention to this aspect as the sector has been hamstrung by protests in the last few years. If they restart, it will be a serious challenge for universities that are already financially strained and are struggling to ensure that academic programmes continue. It is therefore imperative that political decisions that impact on universities are done in consultation with the higher education sector and that institutions collaborate with one another to share experiences, lessons and resources.

Dealing with Administrative Challenges

The unprecedented and unpredictable environment in which people live and work while we come to terms with dealing with the COVID-19 pandemic, requires flexibility and learning by trial and error. However, for students, this can be confusing if communication is non-existent or ineffective. Students (and academics) often receive communication detailing decisions taken rather than being provided with the background and contextual information that informed the decision. This often leads to miscommunication and tensions between institutional leaders, administrators and managers, academics/supervisors and students. There needs to be proper administrative and quality assurance processes (including monitoring the supervision process) that support postgraduate students throughout the different stages of completing their studies which include application, registration, proposal formulation, ethical approval, data collection and write-up, submission for examination and graduation.

The automated email notifications that have become the norm state

that responses will be delayed, since staff are working from home and will respond when they can, are very frustrating for students who are seeking information on several issues including:

- The status of their registration;
- How to contact their supervisor/s;
- How to access their funding (many are bursary recipients who are experiencing challenges in relation to their funding to be released); and
- How to access resources.

Universities are gearing to ramp up training; yet a neglected aspect seems to be training administrators on how to provide the much-needed support for academics and postgraduate students.

The challenges experienced in managing and administering students during this time reveal that universities have failed to develop and implement online postgraduate management systems. Thus, a positive outcome is likely to be more effective administration systems that are user-friendly for students who do not need to be at universities physically.

Lack of Consideration of the Different Academic Stages and Contexts of a Student

Universities seem to be still struggling to communicate with postgraduate students in relation to the different cohorts they belong to in terms of their stage of progression, disciplinary background, geographical location and socio-economic backgrounds. It is important to note that not all disciplines can shift the methodological approaches adopted to online data collection approaches or desktop studies. This is particularly relevant for the physical, biological and environmental sciences where field-based and/or lab-based research is a necessity. Sufficient consideration has also not been given to the costs incurred by many postgraduate students who had to abandon their studies that were already underway as a result of not being able to access labs and/or complete field-based research.

For doctoral students who have to demonstrate expertise in their area of research, critically engage with the field of research, and contribute to the body of research in a specific field; undertaking research in isolation will be

particularly challenging. The need for discipline-specific online research spaces is therefore important to establish.

Students have also expressed concerns with the widespread assumption that if one has internet connectivity, a computer and access to a supervisor; then postgraduate research can proceed. There is also the expectation that this can be an ideal time for students to write. This may be the case for students who are still conceptualising their research, focusing on the literature review and/or are in their final stages of writing, having concluded collecting their data. Additionally, students undertaking desktop research or are able to shift this type of research, are likely to have fewer disruptions with their studies if they have access to the hardware, software and their supervisor. However, a key issue is that insufficient attention is paid to the living environments where students reside. These environments may not be conducive to postgraduate students to be research productive. Isolation from other students and academics is also not conducive to postgraduate studies where peer-to-peer learning opportunities are vital to think through ideas and get feedback from the broader research community. While postgraduate students have supervisor/s, students do rarely not interact with other academics and peers to guide their research thinking. Universities may need to pay attention to the mentoring as well as supervision needs of postgraduate students.

It is also worth noting that there has generally been silence among universities on how to support and address the needs of students with disabilities during this time. The shift to online learning will further disadvantage visually impaired and deaf students. There should be an increased focus on developing support systems for these students. Ndlovu (2020) notes that students with disabilities face various obstacles at postgraduate level in South Africa, specifically inadequate supervision. This is likely to worsen considerably during this period of severe disruptions, since access to supervisors will be even more limited during the current conditions.

Accessing and Using Online Resources, Including the Internet

The discussion in the previous section highlights the importance of accessing the internet for online meetings, training and sourcing resources. The extent to which universities appear to have been in vastly different states of readiness to use online platforms or understand that different types of online resources are

available for online training is surprising. Having been involved in postgraduate training (as facilitators and beneficiaries of such training), caution should be exercised when evaluating the impacts of online training on postgraduate students and supervisors. Unlike at the undergraduate level, where there is a greater level of content focus, at postgraduate level the focus shifts substantially to higher-level critical thinking and sensitivity to discipline/field specificities, which tend to be undermined when generic training is offered. As Mutula (2011:184) states, 'the emphasis of postgraduate research is on developing systematic skills of investigation in the research process'. Thus, as online training becomes a common approach to engage with postgraduate students, greater attention should be paid to the type of information disseminated, as well as the sizes of the number of students participating in the training, and who undertakes the training.

Knowing who is undertaking the training is extremely important to shift from content training on how to write a proposal, how to use statistical packages, how to write academically, etc. to include the why, so that higher-level critical thinking and reflection required at a postgraduate level can be fostered. This requires experts/established researchers from various disciplines who are excellent facilitators in using online training platforms. As noted earlier, a positive impact of the COVID-19 pandemic on higher education is the increased levels of cooperation and collaboration among university leadership to address broader issues such as access to library resources and research ethics processes. It is imperative that spaces are created for increased collaboration at disciplinary/research area levels to go beyond joint research projects that have been effective in attracting national and international funding as well as informal networks, to more formal structures facilitated by the universities to offer training to groups of postgraduate students at different levels and targeting specific disciplines. This will also assist in addressing the supervision capacity challenges that some institutions face in relation to specific disciplines. Virtual platforms do break physical barriers as well as reduce costs associated with travel and venue hire when face-to-face national training workshops are held.

Online resources have become a major source of information for the public in general and students in particular, from school learners to doctoral students. While some academics are aware of the freely available online resources to support their students, many academics are not aware of resources available to assist their postgraduate students. Google search immediately

brings up a range of tutorials, videos, presentations, etc. by experts in the field and students which cover aspects from writing a research proposal to addressing feedback from reviewers when submitting an article for publication. Additionally, several companies/organisations (such as Web of Science, etc.) are making resources freely available as part of their efforts to support universities and the research community during these difficult times. They are also providing webinars and information to assist researchers with useful online searches for academic resources. Many universities globally are also offering free online training, including certificate programmes. There are also useful software packages such as Grammarly, Scrivener, Ref-N-Write and ProWritingAId that have been acquired by some institutions, as well as several that are freely available that help students to write academically. Universities in South Africa should inform postgraduate students and academics of these opportunities and online resources available more effectively.

It is also important to inform students about how to access online resources effectively. The existence of online materials and resources as well as internet connectivity do not mean that postgraduate students can access them. As Jeyshanka, Nachiappan and Lavanya's (2018) study of postgraduate students in Tamil Nadu, India (where students display similar characteristics to the majority of students in South Africa) reveal, differences were noted in relation to information retrieval skills and the use of electronic resources. They assert that students' efforts to use electronic (and online) resources may be limited, due to a lack of skills. Navigating through the myriad of online resources available in the information explosion age can be a daunting task for many postgraduate students. Jeyshanka *et al.* (2018) indicate that being able to find relevant and appropriate information is a skill on its own and demonstrates a researcher's ability to undertake independent research. The importance of library staff to provide training and assistance to postgraduate students becomes essential, again reinforcing that many postgraduate students need interaction and support external to that of their supervisors.

Quality of Research

Several issues emerge in relation to the quality of research which are important to consider since they affect the skill levels of the graduates as well as the value and impact of the research undertaken. The shift to online surveys is understandable, but the reliance on this approach is highly problematic to

examine trends in a country such as South Africa. Who responds to the online surveys depend highly on the existence and quality of internet connectivity, which is not easily accessible to the general populace. Thus, the representativeness of the results can be compromised and can seriously undermine the reliability and validity of the research undertaken. As Grewenig *et al.* (2018) state, online surveys exclude the 'offline' population. Furthermore, online surveys are by their very nature self-completion surveys, and therefore the researcher has limited, if any, opportunities to clarify misinterpretation of questions or probe further if need be, which can be done when face-to-face interviews are conducted (Zhang *et al.* 2017).

Postgraduate training, as indicated earlier, focuses primarily on higher level research skills training that is often imparted by actually doing. In several disciplines, many of these skills are highly technical, and training takes place using the apprenticeship model, as noted by Mutula (2011). The disruptions have severely curtailed this type of training, and as is the case with the online teaching of practical's, different learning approaches and materials need to be developed.

There has been significant focus on assessing and evaluating undergraduate students' performance in virtual settings. Assessing postgraduate progress and examining dissertations and theses produced under conditions imposed to deal with the COVID-19 pandemic also needs rethinking.

Conclusion

The pandemic has certainly exposed that most universities (and certainly academics) are entrenched in traditional modes of engaging with postgraduate students and are struggling to provide them with the supervision they need under the current circumstances. While universities have indicated their desire to create more conducive research environments for postgraduate students, the COVID-19 pandemic has placed a spotlight on the range of challenges faced to support postgraduate students, forcing us to re-examine what constitutes research spaces and environments, especially in the context of virtual engagement. While not the focus of this chapter, there is also a need to provide career and psychological counselling support for postgraduate students who are likely to grapple with a range of anxieties dealing with their academic progress, stress associated with the disruptions, and job prospects when they

complete their studies if not currently employed in a secure job. As Hillman (2020) asserts, a post-coronavirus recession could drive higher education demand and enrolment as job prospects decline and take time to recover from the current worldwide trends of job losses and increased unemployment. Graduates are unlikely to secure jobs in this environment and are likely to opt to continue with their studies, placing increasing pressure on an already overburdened postgraduate education environment in South Africa. This will increase the stress experienced by graduates, especially those who have just completed their degrees and planned to enter the workforce. Hillman (2020) argues that previous research on graduate cohorts post the 2008-2009 economic recession shows that these graduates faced higher unemployment rates and lower pay decades after the recession. This pandemic-induced recession is by far the worst the world has ever seen.

The discussion clearly shows that there are numerous responses to address the postgraduate education challenges faced by the COVID-19 pandemic. What is also evident that best practices are emerging, especially in relation to collaboration efforts to share resources and experiences as well as provide guidelines. Different modes and modalities of research training and supervision approaches are also evident. As a 'new normal' emerges, there is no doubt that the world and higher education landscape will change. While traditional modes of postgraduate training and supervision will return, and the alternative approaches that gained prominence in response to support postgraduate students are likely to be retained. This will be particularly important in the South African context, where many universities have regularly closed due to student protests. Online options will permit teaching, learning and research supervision to continue despite disruptions.

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