

# The COVID-19 Pandemic, Online Teaching/Learning, the Digital Divide, and Epistemological Access

**Petro du Preez**

**ORCID iD:** <http://orcid.org/0000-0002-9100-6461>

**Lesley le Grange**

**ORCID iD:** <http://orcid.org/0000-0002-7096-3609>

## **Abstract**

The COVID-19 pandemic is a multifaceted crisis, imbuing all dimensions of human life and having implications for all disciplines/fields in higher education. The coronavirus outbreak and its spread witnessed higher education institutions across the world racing to introduce online learning offerings and assessments as well as support programmes for staff and students. Few would question the affordances of new technologies to expand learning into virtual spaces and that online learning management systems have ensured that all learning is not thwarted because of the COVID-19 pandemic. However, all students might not be enjoying equitable benefits from the affordances of new technologies. For example, in a country like South Africa there is an acute digital divide, which the COVID-19 crisis has laid bare. Online teaching/learning poses a threat to both formal and epistemological access, as some students might also be disadvantaged by the sudden and rapid change to a different mode of provision. In particular, students who are used to the contact mode of provision might find it more challenging to adapt to a digital mode of provision; not because they are not digitally literate, but because they might not have sufficient access to digital platforms. Furthermore, having access to technology does not guarantee that one gains epistemological access. The latter depends on pedagogical/epistemological labour being performed by both lecturer and student. Our concern in this

chapter is with ways in which the digital divide deprives certain students of epistemological access.

**Keywords:** COVID-19, digital divide, epistemological access, online teaching/ learning

## **1 Introduction**

The past few months have witnessed how the COVID-19 pandemic has radically changed the lives of many across the globe. At the time of writing, globally there are more than 3 million COVID-19 cases, which has resulted in more than 225 000 deaths. In order to practise the unprecedented scale of physical distancing this has demanded, many governments closed down social institutions, a phenomenon which bears the collective name ‘lockdown’. Kaplan (2000) points out that ‘lockdown’ is not a technical term used by health officials, but refers to any form of mandatory geographic quarantines or non-mandatory recommendations such as stay at home, no social gatherings/ events, closure of certain businesses and closure of educational institutions. The purpose of lockdown measures is to slow down the spread of the virus – an effort which has ubiquitously become known as ‘flattening the curve’. The lockdown measures will impact negatively on the global economy and we await what might be the deepest global recession since the Great Depression of the late 1920s and early 1930s. The effects of the COVID-19 pandemic and the mitigating efforts introduced by countries are multiple. We have seen effects that affirm life: health professionals working tirelessly to save lives, peoples’ solidarity and generosity across the globe, a rejuvenating planet, as we see turtles return to desolate beaches in India and Brazil, fish returning to rivers where they have not been seen in years, blue skies in Delhi as air pollution levels decline, and so forth. Moreover, we have come to value those often under-valued by society such as health care professionals, cashiers, police persons, teachers, etc. But, we have also witnessed deaths, inequality laid bare, poverty, unemployment, the negative psychological effects of forced isolation, and so forth.

South Africa was one of the countries that introduced the strictest lockdown measures. On 23 March 2020, its president Cyril Ramaphosa announced a national lockdown of 21 days, from 26 March to 16 April 2020.

The lockdown was subsequently extended to 30 April 2020. South Africa's lockdown involved drastic measures to contain the virus and to save lives: all citizens were to stay at home unless essential workers, citizens could only leave home to purchase essential goods and seek medical care, and could not travel across provincial borders, unless in an exceptional case such as attending of a funeral. Needless to say, the lockdown measures had a bearing on higher education institutions. Most students and staff at contact universities had to leave their university residences and return home. Face-to-face teaching/learning was discontinued and we saw some universities pivot to what is called online teaching/learning. It is online teaching and learning that we wish to specifically focus on in this chapter. We don't believe that full online learning is possible for any South African university, viewing it instead as but one dimension of emergency remote teaching/learning.

There are two concerns in relation to online teaching/learning that we wish to raise. The first is an issue of distributive justice – in an unequal country such as South Africa, there is unequal access to technologies used in online learning as well as unequal access to data and connectivity. The second concern is with epistemological access and we shall argue that access to technology, does not guarantee access to the goods distributed by the university (Morrow 2007). We discuss the two concerns sequentially in the two sections that follow to initiate an ongoing dialogue about these matters. In our parting thoughts, we suggest topics for future research that address matters of social justice, democratic teaching/learning and decolonial discourses.

## **2 Emergency Remote Learning and the Digital Divide**

Online learning is a well-researched dimension of teaching/learning, especially in distance learning contexts. Blended learning and the supplementary use of online learning management platforms have also received attention beyond distance learning contexts. Pockets of excellence exist that demonstrate the viability of online learning in all its facets and different modes of provision. In addition, there are journals such as *The International Review of Research in Open and Distance Learning* and *Distance Education* that are solely devoted to research in this domain.

The COVID-19 pandemic resulted in a situation where lecturers who are accustomed to on-campus, contact teaching had to precipitously migrate

to remote learning; referred to by Hodges, Moore, Lockee, Trust and Bond (2020) as ‘emergence remote teaching’. These authors state that ‘[w]ell-planned online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster’, where instructors have ‘to improvise quick solutions in less-than-ideal circumstances’ (Hodges *et al.* 2020). They also state that the

[t]ypical planning, preparation, and development time for a fully online university course is six to nine months before the course is delivered. Faculty are usually more comfortable teaching online by the second or third iteration of their online courses. It will be impossible for every faculty member to suddenly become an expert in online teaching and learning in this current situation ... (Hodges *et al.* 2020).

Emergency remote teaching has been an arduous task for institutions to implement who predominantly cater for on-campus, contact teaching. Immediate short-term plans that cater for students with access to online resources and those without access had to be developed (Mbodila 2020). It should be noted that online learning is particularly challenging in Africa, ‘where less than a third of the population has access to broadband connectivity’ (Ngalomba 2020). A statistical analysis conducted by Clement (2020) ‘found that South Africa had 36.54 million internet users, of which 34.93 million were mobile internet users’ as of January 2020. Thus, 65% of South Africans have access at present, compared to the 59.3% who had access in 2016. According to StatsSA’s last report in 2016, 53% of the 59.3% used mobile connections. In 2020, 62.7% used mobile connections (Clement 2020). The StatsSA report indicated that:

- (i) only 9.5% of the population have internet access at home;
- (ii) Gauteng and Cape Town are the provinces with the highest percentage of people with online access; and
- (iii) in Limpopo only 42.4% of people have some sort of link to the internet, with only 1.6% of the people having internet at home, and a meagre 2% of rural homesteads being connected (2016).

It is projected that in 2023, 80.8% of people in the country ought to have

access to the internet (StatsSA 2016). However, despite the increased access to information and communication technologies, South Africa still lags behind the other BRICS countries. China, for example, has the most internet users amongst these countries. These statistics provide evidence that South Africa has a long way to go to provide access for the majority of the population and to ensure digital inclusion. In the wake of the COVID-19 pandemic, these statistics will be ever-more pertinent, as laid bare by the digital divide in the country.

In response to the pandemic, Stellenbosch University, for example, pledged ‘to rapidly generate pragmatic solutions for the complex challenges faced by our diverse student body’ (Schoonwinkel, Van der Merwe & De Klerk 2020). In cases where short-term, pragmatic solutions are implemented, learning management systems are often merely used as a platform for students to retrieve information. The question to be asked is as to whether mere retrieval or exchange of information constitutes learning (Le Grange, 2004). Self-sufficiency, participation and collaboration often fall short in situations where the sophisticated nature of interactive platforms and applications are not acknowledged and used holistically. Hodges *et al.* (2020) warn that a rapid turn to online learning might potentially diminish the quality of courses offered. Also, improvising quick solutions could potentially lead to an instrumentalist understanding of online learning.

Du Toit and Verhoef (2018) argue that an instrumentalist approach to the use of digital technologies in higher education denies the embodied and socially embedded nature of the individual (which could also curb transformation in the higher education sector). Furthermore, they state that such an approach is derived from dominant paradigms, such as pragmatism, and social constructivism (see Du Toit [2018] for a detailed critique of these approaches from a Philosophy of Technology perspective). These approaches have a tendency to neglect the complex and intra-relatedness of the embodied person as they artificially divide technology (culture) and the person (nature) (Du Toit 2018). Du Toit and Verhoef (2018:7) postulate that an embodied understanding of technology recognises the personhood of the student: ‘His or her language, culture, perceptual faith and imagination ...’. Le Grange (2004) too emphasises the importance of embodied interactions to make progress in areas of race relations and cultural inclusion. Cultural access has been seen as one of the obstacles to bridging the digital divide (Pew Research Center 2013). Harambam, Aupers and Houtman (2013:1093) ‘theorize [sic]

that appropriating the internet (or not) is less related to socio-economic position or usage and skills, and is more culturally informed than theories about a digital divide allow for'. This might be the case for developed countries, but in developing countries the socio-economic position of people remain the largest reason for not appropriating the internet because of the digital divide.

The notion 'digital divide', which refers to a gap in terms of access to and usage of information and communication technology between people from different geo-political, demographic and socio-economic groups, and was first coined by Larry Irving (Asmelash 2019). Steele (2019) argues that,

[d]igital inequality is evident between communities living in urban areas and those living in rural settlements; between socioeconomic groups; between less economically developed countries and more economically developed countries; between the educated and uneducated population. Individuals with access to a broadband connection can be digitally split. How? Low-performance computers, limited broadband speeds and limited access to subscription-based content widen the gap.

A distinction is made between three types of digital divide, i.e.: the gender divide, social divide and the universal access divide (Steele 2019). Age (Friemel 2016) and race (Floburg 2018) constitute two further types of digital divide. The digital divide has an impact on the economy, on various social spheres, society at large, and education (Steele, 2019). Digital inequality in education is magnified when there is a lack of internet access, data devices, technological know-how, and reliance on varying teaching styles and levels of engagement (Steele 2019).

Traditionally, a narrow perspective of the digital divide was held that referred to those having access and those without access (Van Dijk 2006). This perspective has been followed by a broader perspective denoting inequality between those with more, and those with less bandwidth, as well as those with more skills and those with fewer skills (Blau 2002; Hargittai 2003). More recently reference has been made to 'second-level digital divide' (Correa 2008). This discourse highlights the gap between knowledge consumers and knowledge producers. This gap is also caused by socio-economic inequality insofar as those with access and the necessary skills are more likely to

contribute to knowledge production than those with limited access, skills and training. On the Violence Prevention through Urban Upgrading's (VPUU) website, it is stated that South Africa, as one of the most unequal societies in the world, experiences an overwhelming lack of access to basic services, skills training, and employment opportunities. A digital divide also exists between those with the necessary technological skills, the ability to contribute to knowledge production and financial resources to optimally use the internet. Furthermore, the VPUU (n.d.) state that,

[a]ccess to digital skills as well as affordable and quality internet coverage remains unevenly distributed in South Africa. Higher-income young people are able to get a good education and increase their skills for the digital future. However, each year thousands of lower-income young South Africans leave schools without even basic digital literacy. If predictions of decreasing demand for low-skilled labour are anything to go by, this is a valid cause of concern.

The extended lockdown compelled universities to turn to emerging remote learning in an attempt to salvage the academic year. However, not all students have physical access to the digital devices and data. Many of these students rely on limited state funding to finance their studies and therefore also lack the finances to maintain connectivity. On the positive side, universities launched initiatives to provide pre-paid data and rental computers to students (and staff) who normally made use of institutional infrastructures to gain access. Provision of affordable pre-paid data packages were negotiated by the Department of Higher Education with the main service providers in the country. Service providers also offered zero rate access to universities' primary websites, library websites and learning management systems. However, even though these efforts may narrow the gap, a digital divide still remains if one bears in mind the nuanced understanding of digital divide discussed earlier.

Student leaders, amongst other matters such as the funding structure and the date of commencement of online learning, voiced their concerns pertaining to the introduction of emergency online teaching, stating that 'the majority [of students] lived in communities with poor network coverage and others in areas without electricity' (Ngqakamba 2020:n.p.), which results in an unequal, undemocratic digital citizenry. Online learning has been described

by some of them as ‘unaffordable, impractical and elitist’ (Mukeredzi, Kokutse & Dell 2020:n.p.). In response to the socio-demographic inequalities raised by students (and staff) together with the commitment that no student should be left behind, some universities like the University of Cape Town, undertook ‘to distribute printed learning materials and USB drives for students who cannot access the internet in any form’ (Petersen 2020:n.p.).

Physical access to information and communication technologies are not the only challenge facing universities amidst the COVID-19 pandemic. Universities attract students from various demographic areas, including rural and township areas, where students might lack digital fluency as they might not have prior exposure to information and communication technologies in education (Mbodila 2020). Although students might be perceived as ‘digital natives’ (Mbodila 2020), one cannot assume that they are fluent or literate in how to navigate themselves on learning management systems. This could be because of a lack of access to digital literacy training and/or insufficient knowledge on how to use different online platforms and applications. Graham (2011) has labelled the lack of access to digital literacy, the ‘knowledge divide’.

In addition, cognitive access requires a level of information literacy that can succour users to find and use reliable, valid information in the context of mass amounts of information. Information literacy calls for a heuristics ‘to select and organise information and define criteria for distinguishing what is significant and relevant’ (Le Grange 2004:91). ‘Librarians play a central role in the development of students' information literacy’ (Aqili & Moghaddam 2008).

When physical access (in this instance access to device and connectivity) is denied to certain strata of the population, when financial access is curbed, and when opportunities to improve digital fluency are limited, a digital gap emerges that fortifies the unequal distribution of information and communication technologies in disadvantaged communities. In a country like South Africa, communities are often disadvantaged along lines of race and revenue, which makes access a highly politicised issue. Current media reports attest to this politicised nature of access by overstating physical and financial access. Little is, however, being said about epistemological access, which could further widen the inequality gap amongst students. We acknowledge that the question of access amidst the current pandemic ought to be politicised, as physical access is indeed racialised, but

attention should also be given to epistemological access. More will be said about epistemological access in the next section.

### **3 Epistemological Access**

Epistemological access was coined by the late Wally Morrow in a presentation made to the University of Limpopo in 1992. This was followed by a presentation at the annual conference of the Kenton Education Association in the same year (Morrow 2007). The context of the term's coinage was the challenge presented to him when teaching large classes of B.Ed<sup>1</sup> students at the University of the Western Cape (UWC) in the late 1980s and early 1990s as a consequence of the university's policy of widening access. Muller (2014) points out that there was not much attention given to the notion of epistemological access until the early 2000s, when it was taken up by scholars of higher education studies, presumably because of widened access given to previously disadvantaged students at former white universities. Morrow's idea of epistemological access has, since, also been applied to school education (see Pendlebury 2010; Du Plooy & Zindilile 2014).

Although Morrow's notion of epistemological access has been valorised by most, there have been some critiques of the idea. One criticism is that Morrow did not provide sufficient insights as to what epistemological access affords us to do (see Shalem 2010; Muller 2014). As Muller (2014: 265) puts it, 'Morrow left us with tantalisingly few clues as to how we might 'structure' the curriculum to make it more accessible to such students'. Another criticism is that Morrow's notion of epistemological access is too narrow because it neglects the political and social dimensions of epistemological access (Du Plooy & Zindilile 2014) and does not include knowledge outside/beyond the Western canon (Le Grange 2011). We shall not elaborate on these debates in this chapter but wish to focus on the implications of Morrow's notion of epistemological for both teacher (lecturer in this context) and student in the context of the recent pivot to emerging remote teaching/learning by certain universities.

Morrow (1994) invoked the notion of epistemological access to distinguish it from the notion of formal access (physical access). He argued

---

<sup>1</sup> The B.Ed. referred to here was an advanced qualification in education at the time and is now named a B.Ed. (Hons) degree.

that granting a student admission (formal access) to the university does not mean that he/she gains access to the knowledge that the university distributes (epistemological access). For, Morrow widened access or the right to education ought to mean epistemological access not just formal access. How does this relate to the current migration by universities to online teaching/learning during the COVID-19 pandemic? We mentioned earlier that in an unequal society such as South Africa, where there is a digital divide, the migration to online teaching/learning during the COVID-19 pandemic might further exacerbate educational inequalities, due to uneven access to information technology (IT), devices, and connectivity. However, even for those who have adequate access to IT and connectivity (formal access of a different kind), this does not guarantee epistemological access.

For Morrow (1992; 2007) epistemological access depends on systematic teaching that makes possible organised systematic learning. Systematic teaching requires labour on the part of teacher/lecturer that involves selecting and sequencing information to ensure continuity and progression in learning, which gives rise to knowledge acquisition. Moreover, Slonimsky and Shalem (2006) argue that epistemological access is dependent on curriculum responsiveness that is not only restricted to disciplinary responsiveness (a limitation in Morrow's conception) but also to economic, cultural/institutional, and learning responsiveness. According to Moll (2004:4) curriculum responsiveness 'entails accommodating diversity of socio-cultural realities of students, by developing a wider variety of instructional strategies and learning pathways'. Designing curricula that are responsive is an arduous and time-consuming task, and is more challenging when it comes to online teaching/ learning. Doing so for online teaching/learning assumes that academic and support staff have sophisticated levels of both technical and pedagogical competence (Le Grange 2004), and that such competence cannot be developed overnight.

As most students have returned home during the lockdown and certain risk-adjusted levels that follow it, some would be enjoying the comfort of a middle class home, with few occupants, uncapped data, access to amenities and a range of resources, whilst others will be in crowded homes in townships, with limited access to the affordances of online learning, limited access to amenities, and so forth. We mention this because context impacts on epistemological access, as Pendlebury (2010:74) so neatly captures in the following:

[W]ithout teachers' temporal attunement to the cognitive, emotional and contextual conditions for systematic learning, the possibilities for learners' epistemological access to 'big knowledge' are severely curtailed and the much-vaunted right to education remains, at best, only thinly realised.

Ensuring epistemological access in the context of remote teaching/learning demands a great deal of labour from lecturers. In addition to the technical and pedagogical competence required, lecturers would need to be understand the range of contexts in which students are learning. Therefore, if any degree of epistemological access is to be ensured during the COVID-19 pandemic, then it cannot simply be via online teaching/learning, but ought to be through an expanded notion of emergency remote teaching/learning. This will involve for some, complementing online teaching/learning with other forms of e-learning, interactive print materials and expository texts. And for others, online learning might only be a small part of their emergency remote learning and a greater reliance on other modes of learning mentioned. Importantly, students should be actively involved in designing learning programmes through providing regular feedback on their experiences. Face-to-face teaching/learning does not guarantee epistemological access, and does not efface historical (dis)advantages, but does level some things such as students having the same access to the resources that the residential university affords. This levelling of the playing field is harder to achieve through online teaching/learning.

## **7 Some Parting Thoughts**

In this chapter, we have raised some of the challenges related to efforts in the migration from face-to-face contact teaching to alternative forms of teaching/learning as South African society is confronted with the COVID-19 pandemic. As many tout online teaching as a panacea to the current crisis because face-to-face teaching/learning is no longer possible, we sound a cautionary note that authentic online teaching/learning in South Africa might be beyond the reach of many students unless interventions happen at several fronts. This is not only because of the digital divide, but because it presents challenges to epistemological access. Post-COVID-19, online teaching/learning is likely to form a greater component of learning programmes at

South African universities, and lessons can be learned from the current experience. Firstly, universities in partnership with government and the private sector can build on current efforts to provide free devices, data, and connectivity to all students. Secondly, feedback from academics and support staff on their experiences could be systematically captured so as to inform ongoing professional development programmes for university staff aimed at enhancing their technical and pedagogical competencies. Thirdly, feedback from students on their experiences of online teaching/learning could inform the development of future learning programmes and feed into professional development programmes offered to staff.

Currently, we can at best implement emergency remote teaching/learning in an expanded form that involves a range of different ways of mediating learning of which online learning management systems is but one medium. Furthermore, that a combination of online learning, other forms of e-learning, interactive print materials and expository texts ought to be combined in tailored ways to suit the differing needs and capacities of students.

All this being said, it is worth exploring the extent to which the pandemic has forced us to examine discourses of social justice afresh, as pertinent to the possibilities that online learning can proffer to achieve the goals of democratic teaching/learning contexts in future research endeavours. For one thing, the pivot towards online teaching/learning during COVID-19 has forcibly reminded us of the inequalities that exist in South African society generally, and in higher education in particular, and consequently why the decolonial project is an imperative as urgent as ever. The link between digital access, epistemological access and the decolonial project requires further investigation as it might (amongst other things) enable the creation of collective digital knowledge production platforms that can fundamentally challenge the complex relations between teaching/ learning by challenging the hegemony of teaching in the teaching/learning equation.

We have raised some critical issues about the affordances of online teaching/ learning in South Africa in the context of the COVID-19 pandemic. It is inevitable that advanced technology will increasingly play a role in higher education, but underscore that it should be used to advance rather than encumber social and cognitive justice.

## References

- Aqili, S. & A. Moghaddam 2008. Bridging the Digital Divide: The Role of Librarians and Information Professionals in the Third Millennium. *Electronic Library* 26,2: 226 - 237. Available at: <https://www.emerald.com/insight/content/doi/10.1108/02640470810864118/full/html>  
<https://doi.org/10.1108/02640470810864118>
- Asmelash, L. 2019. Larry Irving is the First African American Inducted into the Internet Hall of Fame. CNN. Available at: <https://edition.cnn.com/2019/09/27/us/internet-hall-of-fame-first-african-american-trnd/index.html>
- Blau, A. 2002. Access isn't Enough: Merely Connecting People and Computers won't Close the Digital Divide. *American Libraries* 33,6: 50 - 52.  
Available at: <https://www.questia.com/magazine/1G1-87741194/access-isn-t-enough-merely-connecting-people-and>
- Clement, J. 2020. Digital Population in South Africa as of January 2020. Available at: <https://www.statista.com/statistics/685134/south-africa-digital-population/>
- Correa, T. 2008. Literature Review: Understanding the 'Second-Level Digital Divide'. Unpublished manuscript, School of Journalism, College of Communication, University of Texas at Austin. Available at: [https://www.academia.edu/212163/Literature\\_Review\\_Understanding\\_the\\_second-level\\_digital\\_divide](https://www.academia.edu/212163/Literature_Review_Understanding_the_second-level_digital_divide)
- Du Plooy, L. & M. Zilindile 2014. Problematising the Concept of Epistemological Access with Regard to Foundation Phase Education towards Quality Schooling. *South African Journal of Childhood Education* 4,1: 187 - 201. <https://doi.org/10.4102/sajce.v4i1.51>
- Du Toit, J. 2018. *Towards a Merleau-Pontian Account of the Phenomenon of Digital Technology: From Disembodiment to the Embodied Screen*. Awarded at, North-West University, Potchefstroom. Available at: <https://repository.nwu.ac.za/handle/10394/30813>
- Du Toit, J. & A. Verhoef 2018. Embodied Digital Technology and Transformation in Higher Education. *Transformation in Higher Education*, 3: a52. Available at: <https://doi.org/10.4102/the.v3i0.52>  
<https://thejournal.org.za/index.php/thejournal/article/view/52/154>
-

- Floberg, D. 2018. The Racial Digital Divide Persists. *Free Press*. Available at: <https://www.freepress.net/our-response/expert-analysis/insights-opinions/racial-digital-divide-persists> (Accessed on 30 April 2020).
- Friemel, T. 2016. The Digital Divide has Grown Old: Determinants of a Digital Divide among Seniors. *New Media & Society* 18,2: 313 - 331. Available at: <https://journals.sagepub.com/doi/abs/10.1177/1461444814538648>  
<https://doi.org/10.1177/1461444814538648>
- Graham, M. 2011. Time Machines and Virtual Portals: The Spatialities of the Digital Divide. *Progress in Development Studies* 11,3: 211 - 227. Available at: <https://doi.org/10.1177/146499341001100303>  
<https://journals.sagepub.com/doi/10.1177/146499341001100303>
- Harambam, J., S. Aupers & D. Houtman 2013. The Contentious Gap: From Digital Divide to Cultural Beliefs about Online Interactions. *Information, Communication & Society* 16,7: 1093 - 1114. Available at: <https://www.tandfonline.com/doi/abs/10.1080/1369118X.2012.687006>  
<https://doi.org/10.1080/1369118X.2012.687006>
- Hargittai, E. 2003. The Digital Divide and What to Do About It. In Jones, D.C. (ed.): *New Economy Handbook*. San Diego, CA: Academic Press. Available at: <https://www.scholars.northwestern.edu/en/publications/the-digital-divide-and-what-to-do-about-it>
- Hodges, C., S. Moore, B. Lockee, T. Trust & M. Bond 2020. The Difference between Emergency Remote Teaching and Online Learning. Available at: <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>
- Kalpan, J. 2020. At Least 20% of the Global Population is on Coronavirus Lockdown – Here are the Rules. *Business Insider*, US. <https://www.businessinsider.co.za/countries-on-lockdown-coronavirus-italy-2020-3-4>
- Lai, C-C., T-P. Shih, W-C. Ko, H-J. Tang & P-R. Hsueh 2020. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and Coronavirus Disease-2019 (COVID-19): The Epidemic and the Challenges. *International Journal of Antimicrobial Agents* 55,3. <https://doi.org/10.1016/j.ijantimicag.2020.105924>  
PMid:32081636 PMCID:PMC7127800
-

- Le Grange, L. 2004. E-learning: Some Critical Thoughts. *South African Journal of Higher Education* 18,1: 87 - 97. Available at:  
<https://journals.co.za/content/high/18/1/EJC37052>  
<https://doi.org/10.4314/sajhe.v18i1.25430>
- Le Grange, L. 2011. Challenges for Curriculum in a Contemporary South Africa. In Bitzer, E. & N. Botha (eds.): *Curriculum Inquiry in South African Higher Education: Scholarly Affirmations and Challenges*. Stellenbosch: SunMedia Publishers.  
<https://doi.org/10.18820/9781920338671/03>  
PMid:20151366 PMCID:PMC4470383
- Mbodila, M. 2020. Online learning – The Pandemic cannot Change Reality. *University World News: Africa Edition*. Available at:  
<https://www.universityworldnews.com/post.php?story=20200420130222745>
- Moll, I. 2004. Curriculum Responsiveness: The Anatomy of a Concept. In Griesel, H. (ed.): *Curriculum Responsiveness: Case Studies in Higher Education*. Pretoria: South African Universities Vice-Chancellors Association.
- Morrow, W. 1994. Entitlement and Achievement in Education. *Studies in Philosophy and Education* 13,1: 33 - 47.  
<https://doi.org/10.1007/BF01074084>
- Morrow, W. 2007. *Learning to Teach in South Africa*. Cape Town: HSRC Press.
- Mukeredzi, T., F. Kokutse & S. Dell 2020. Student Bodies say e-Learning is Unaffordable and Elitist. *University World News: Africa Edition*. Available at:  
<https://www.universityworldnews.com/post.php?story=20200422075107312>
- Muller, J. 2014. Every Picture Tells a Story: Epistemological Access and Knowledge. *Education as Change* 18,2: 225 - 269.  
<http://dx.doi.org/10.1080/16823206.2014.932256>  
<https://doi.org/10.1080/16823206.2014.932256>
- Ngalomba, S. 2020. Using WhatsApp to Enhance Online Learning. *University World News: Africa Edition*. Available at:  
<https://www.universityworldnews.com/post.php?story=20200421102812987>
- Ngqakamba, S. 2020. Lockdown: Student Leaders at Wits, UJ want More

*Online Teaching/ Learning, the Digital Divide and Epistemological Access*

Discussion before Online Learning Starts. Available at:

<https://www.news24.com/SouthAfrica/News/lockdown-student-leaders-at-wits-uj-want-more-discussion-before-online-learning-starts-20200420>

Pendlebury, S. 2010. Time for Hedgehogs as Well as Foxes: Some Temporal Aspects of Epistemological Access to Basic Education. In Shalem, Y. & S. Pendlebury (eds.): *Retrieving Teaching: Critical Issues in Curriculum, Pedagogy and Learning*. Lansdowne: Juta.

Petersen, T. 2020. UCT Provides Pre-paid Data at No Cost to Ctudents for Online Learning. *News24*. Available at:

<https://www.news24.com/SouthAfrica/News/uct-provides-pre-paid-data-at-no-cost-to-students-for-online-learning-20200421>

Pew Research Center 2013. Digital Divide. Available at:

<https://www.pewresearch.org/internet/2016/07/14/digital-divides-2016/>

Rothan, H.A. & S.N. Byrareddy 2020. The Epidemiology and Pathogenesis of Coronavirus (COVID-19) Outbreak. *Journal of Autoimmunity* 109.

<http://doi.org/10.1016/j.jaut.2020.102433>

PMid:32113704 PMCID:PMC7127067

Schoonwinkel, A., A. van der Merwe & M. de Klerk M. 2020. Navigating Uncertainty in the Move to Online Learning. *University World News: Africa Edition*. Available at:

<https://www.universityworldnews.com/post.php?story=20200421085256435>

Shalem, Y. 2010. How Does the Form of Curriculum Affect Systematic Learning? In Shalem, Y. & S. Pendlebury (eds.): *Retrieving Teaching: Critical Issues in Curriculum, Pedagogy and Learning*. Cape Town: Juta.

Slonimsky, L. & Y. Shalem 2006. Pedagogic Responsiveness for Academic Depth. *Journal of Education* 40: 35 - 58.

StatsSA, 2016. *General Household Survey*. Pretoria: Statistics South Africa. Available at:

<http://www.statssa.gov.za/publications/P0318/P03182016.pdf>

Steele, C. 2019. What is the Digital Divide? Digital Divide Council. Available at: <http://www.digitaldividecouncil.com/what-is-the-digital-divide/>

Van Dijk, J. 2006. Digital Divide Research, Achievements and Shortcomings. *Poetics* 34,4-5: 221 - 235. Available at:

<https://www.sciencedirect.com/science/article/pii/S0304422X06000167?via%3Dihub>

*Petro du Preez & Lesley le Grange*

<https://doi.org/10.1016/j.poetic.2006.05.004>

Violence Prevention through Urban Upgrading (VPUU) 2019. Bridging the New Digital Divide. Available at: <http://vpuu.org.za/ict4d/digital-divide-south-africa/>

Petro du Preez

Professor

School of Professional Studies in Education

Subject group: Curriculum Studies, Philosophy and Research Methodology

North-West University

Potchefstroom

[petro.dupreez@nwu.ac.za](mailto:petro.dupreez@nwu.ac.za)

Lesley le Grange

Distinguished Professor

Department of Curriculum Studies

Stellenbosch University

Stellenbosch

[llg@sun.ac.za](mailto:llg@sun.ac.za)