

## Transformations in Higher Educational Institutions: A Review of the Post-COVID-19 Era

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### Article Info

Received: November 11, 2021

Revised: March 2, 2022

Accepted: April 4, 2022

 10.46303/jcve.2022.13

### How to cite

Odularu, O. I., Puzi, M. E., Ngqila, K. H., & Olatoye, T. A. (2022).

Transformations in Higher Educational Institutions: A Review of the Post-COVID-19 Era. *Journal of Culture and Values in Education*, 5(1), 183-194.

<https://doi.org/10.46303/jcve.2022.13>

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### ABSTRACT

The COVID-19 epidemic was initially experienced in China, in a city called Wuhan (December 2019), and Europe, the USA and Australia were not left behind. South Africa was the worst-hit country, with a total of 88,914 deaths recorded on October 24, 2021, and like many other countries of the world, it suffered the loss of human lives and livelihoods. In 2021, almost 65,000 South Africans had been lost to the pandemic. This pandemic has destabilised systems and processes that define human existence, thereby wreaking havoc on many facets of human life, with education being predominantly affected. COVID-19 has fostered global readjustments in education with the advent of online teaching or, as referred to in some studies, emergency online education. This paper examined many of the challenges faced by students and lecturers, including adaptation problems among lecturers and students, internet connectivity issues, an un conducive teaching and learning workspace, and associated health risks. This study also reviewed positive developments that took place since the onset of the COVID-19 pandemic, such as the WiSeUp Moodle Training, academic discourse, and capacity development. In addition, it is suggested that researchers carry out further studies on the effects of COVID-19 with reference to teaching and learning. The paper concludes by reviewing the positive and negative teaching and learning outcomes of the transformations that Higher Educational Institutions underwent after the onset of the COVID-19 pandemic.

### KEYWORDS

Digital education; higher education; teaching; learning; Post-COVID-19 era.

## INTRODUCTION

Online learning was hastily imposed due to the COVID-19 pandemic. Several stakeholders in the e-learning processes of Higher Educational Institutions (HEIs) underwent a myriad of challenges while adapting to the Covid era. Over 300 new infectious diseases have emerged around the world from 1940 to 2021 (Tabish, 2020). Hence, over 30% of the incidence of disabilities in humans are associated with infectious diseases, affecting life expectancy, resulting in reduced work efficiencies and increasing morbidity (Tabish, 2020). Men and microorganisms have been co-existing since the advent of civilisation, although the situation has worsened on account of the ever-increasing human populations sizes. In addition, several human interventions have been carried out across the globe, culminating in higher infection rates.

As of October 2021, nearly 90,000 South Africans had been lost to COVID-19. The world reacted to the COVID-19 pandemic, mobilising generous amounts of resources at a considerable speed (Affouneh et al., 2021). The causal agent of the disease was recognized and hitherto sequenced by scientists in China (Bergquist, 2020). Several potential treatments were proposed and with ongoing research, vaccines have been produced to reduce causalities associated with COVID-19 (Yan et al., 2020). However, underprivileged individuals that have limited access to good living conditions are seriously challenged and will likely be negatively impacted (Ghaebi et al., 2020). As the world experiences a pandemic, it is important for policymakers and governments across the globe to seek preventive measures and proper health care services with regard to the levels of poverty and hunger ravaging the poor. The COVID-19 pandemic could also facilitate the spread of other preventable diseases, thereby making the economic recovery COVID-19 much harder (Hall, 2020; Yi et al., 2020).

Clinical analyses of the symptoms associated with Covid 19 are carried out and include chest imaging data (Shaw et al., 2020). However, the infection is confirmed by a genetic evaluation of samples derived from the respiratory organs (e.g., throat swabs) and infected patients are kept in intensive care. It is also imperative to state that social distancing is vital to regulate the spread of the virus on global scale (Lotfi & Hamblin, 2020) as it reduces infection rates, keeping our healthcare facilities from becoming overpowered.

There is a strong relationship between stress responses and perceived social connectedness, and more visible effects are observable among isolated and lonely individuals. Consequently, enhancing mental health is vital to improving the physical health of the infected persons being treated (Walsh, 2020). Thus, mental health should be considered the utmost priority. From the foregoing, technology plays a vital role in mitigating negative effects of social distancing, as it enables communication between family and friends, even from afar. Be that as it may, social distancing should be considered as a momentary phenomenon and not a permanent occurrence.

Several strategies involving opinion leaders, community leaders, and responsible print and electronic media should be adopted to control the pandemic and the virus from spreading further. COVID-19 could become widespread like the Human Immuno-Deficiency Virus (HIV).

Thus, with effort, the disease may be controlled to reduce risks, and it is the responsibility of all persons to contribute to ameliorating the pandemic (Raoofti et al., 2020). It is also imperative to state that factors that promote good living habits, such as food, shelter, and adequate healthcare facilities should be provided to deprived human populations. Equally crucial is the care for refugees and internally displaced people (IDPs), as they require special attention (Alio et al., 2020).

The current COVID-19 pandemic has suddenly and dramatically influenced social relationships, work ethics and living on a global level (Hua & Shaw, 2020). Accordingly, Piccarozzi et al. (2021) highlighted the importance of technology, which has assumed a crucial role in encouraging Higher Educational Institutions (HEIs) to begin and/or complete their digital evolution processes, especially in the Covid 19 era. Technological tools have greatly enhanced teaching and learning in numerous forms since the initial stages of the pandemic and have brought significant changes to the administration of HEIs globally, which faced new challenges and new curriculum requirements (Mishra et al., 2020). COVID-19 has guided academia all around the world to the observation and in-depth research of the aftermath and impacts of the pandemic on educational management, learning and teaching, with many studies on this field surfacing within a short period of time. Hence, numerous studies have highlighted the importance of fully conceptualising the repercussions of this pandemic and of developing strategies to withstand the epidemic within HEIs (Egron-Polak et al., 2015).

Studies have investigated some of the strategies adopted by HEIs to fight the COVID-19 pandemic (Elsaid et al., 2021). Such strategies are essential to help HEIs overcome the lockdown, which continued from 2020 to 2021. For example, the QS, Educations, and Study Portals websites recently conducted research surveys concerning the COVID-19 impact on education for the academic staff and students COVID-19. However, it is also crucial to note that very few empirical studies have assessed this phenomenon. Furthermore, few studies that seek to correlate the performance of students in online distance learning during the lockdown with the conventional classroom education approach are available.

This research is premised on the clarion call made by the World Health Organization soliciting the development of scientific research. This paper reviews how HEIs are handling the major transformations associated with the migration to online education in teaching and learning (Blin & Munro, 2008). This investigation contributes to knowledge on insightful teaching on the transition from the interrupted “face-to-face” learning (FTFL) period to online education (Rensburg, 2020). This paper also elucidates the usage of technological platforms and tools used to obtain online information (e.g., to stream conferences, for video conferences and web-based learning platforms), which bring innovative e-learning methodologies. Additionally, the recommendations based on findings of this paper will speed up the improvement of how HEIs deal with the pandemic and enhance the adaptation of HEIs to the Covid situation by making recommendations of further investigations on effective and practical e-learning methods. Consequently, it will enhance research studies conducted by academic staff and

students through the usage of online education in their academic plans, especially in HEIs challenged by a lack of IT infrastructure and skills.

### LITERATURE REVIEW

The pandemic has seriously impacted academic activities in HEIs, thereby transforming educational activities (Marinoni et al., 2020; Mishra et al., 2020). The unprecedented disruption caused by the COVID-19 has resulted in world economies cutting down budgets and in some HEIs of many developing countries downsizing academic personnel (García-Morales et al., 2021, Krishnamurthy, 2020; Nicola et al., 2020). In addition, social distancing measures, the imposition of lockdowns and the stoppage of personal contact have also been entrenched by governments at local and international scales in an attempt to mitigate the spread of the virus.

All over the world, and since the beginning of 2020, there has been only one topic of interest – the COVID-19 pandemic. Numerous studies have sought to determine the correlation between student performance in HEIs when in FTFL and online (remote) education (Hicham et al., 2020). COVID-19 With the health crisis it caused and the number of infected people still on the rise, it is difficult to foresee its impact on the economy and society at large (Hodgson et al., 2021). First detected in China, coronavirus has travelled to 213 countries and territories, infected over eleven million citizens, and claimed the lives of over 530,000 people at the time of this writing. Several countries have implemented health, economic and social measures to face the contagion, seeking to “flatten its curve” until vaccines to combat the disease are developed (Anderson et al., 2020). How long the impact of COVID-19 will last and how efficient the measures taken to face it are not known (Karabag, 2020). Hence, the pandemic has compelled several HEIs to make substantial adjustments to their usual academic engagements and processes, thereby leading many academics and students in HEIs across the world to promptly adapt to online teaching methods. Accordingly, many academics have adopted new online teaching techniques, despite the minimal prior experience (Dhawan, 2020; Alhammadi, 2021).

Khan et al. (2021) reviewed studies published in the United Kingdom, China, USA, and several other countries that focused on the impact of Covid-19 on HEIs and predicted COVID-19 developments after the onset of the pandemics seeking to analyse the impact of technology in transforming digital learning during the Covid19 era. This review, in turn, examined emerging evidence on the effects of the COVID-19 pandemics on HEIs and assessed changes in e-learning that occurred in the sector. Hence, the evaluation of knowledge gaps related to the effects of the COVID-19 pandemics on education and of the need to transform traditional education methods into enhanced e-learning and teaching techniques will result in empirical solutions to some of the aforementioned challenges COVID-19 (Sun et al., 2008).

Nachit and Belhacen (2020) stated that several countries, especially the emerging ones, are still struggling with the development of their digital education, which requires an initial construction and maturation of a digital infrastructure (i.e., fibre-optic networks, wireless-based

ICT, digital technologies, artificial intelligence, big data, cloud computing, etc.) including software that would ensure a 24/7 online real-time connectivity. The development of a certain level of awareness regarding the importance of digital transformation within HEIs improves the skills of staff members and students, results in a better understanding of the changes occurring in the global academic environment, and significantly increases the ability of HEIs to embrace and use digital technologies (i.e., digital readiness).

Studies report educational disruptions within HEIs on account of the COVID-19 pandemic in over thirty countries under three main categories, namely (1) exacerbated inequities and gaps in the use of technology, (2) different evaluation and assessment methods, and (3) the use of online control of unethical academic behaviour (Elsaid et al., 2021). In addition, Hjelsvold et al. (2020) examined the feedback of 300 undergraduate students and 56 lecturers on distance education during the COVID-19 lockdown in Norway and reported that the lack of resources available and short time reduced their preference for online learning. The main factors influencing the online experience of students included the need to give feedback to their lecturers, participation in group discussions/assignments, usage of online tutorials for group work exercises, and the lecturers reported to provide a prompt communication regarding summative and formative assessments, assignments, examinations, and to use teaching support tools that enable the online interactions between students and lecturers, and among students, enhancing home-study experience (Hjelsvold et al., 2020). HEI administrators reported that online education favoured timely communication with students, particularly concerning examination petitions and regulations, provided student support as regards teaching approaches, and enhanced collaboration between the academic staff (Cahill et al., 2010). Additionally, Pholotho and Mtsweni (2016) stated that the general online (remote) learning experience resulting from the COVID-19 lockdown experienced in some Egyptian HEIs was positive, and therefore recommended the future application of this learning method.

Digital transformation can be better termed as the complete result or an important development in societal transformation (Kalimullina et al., 2021; Mbunge, 2020). Accordingly, digitisation and technology are perceived as developments in many studies. Emerging technologies are urgently required for efficient global efforts in preventing, monitoring, predicting, tracking and treating the COVID-19 pandemic, as well as in the allocation of resources and development of vaccines (Greiner et al. (2019). Also, COVID-19 effects have been reported to cause a radical transformation of education and training in HEIs, which led students and lecturers to swiftly imbibe an e-learning culture (Dwivedi, 2020; García-Morales et al., 2021). In a review, Carolan (2020) reported that the sudden shift in education strategies caused HEIs to evolve into online teaching in the fastest possible time. Consequently, the teaching staff executed and acclimatised to the use of technological resources, despite lacking the technological abilities for online teaching. Hence, HEIs should make provisions for digital transformations and foster a culture of online education. There is no doubt that the advent of disruptive innovation comes with uncertainty and risk, but it also encourages new opportunities

which foster an innovative culture (Habibu et al., 2012). It is also imperative to state that the positive evolution of HEIs from obsolete teaching and learning methods should promote participatory strategies, which support the transparent assessment of outcomes as well as evidence-based decision-making (Mishra et al., 2020). Hence, the pandemic will accelerate technological developments of HEIs worldwide (Krishnamurthy, 2020). Accordingly, it is imperative for HEIs to redesign their learning and teaching strategies to face the COVID-19 situation, and to be aware of potential barriers, thereby recognising new systems and tools that incorporate online education into the teaching-learning processes (Carolan, 2020).

Dwivedi (2020) reported that online teaching saved time in delivering lectures compared with physical, face-to-face, teaching and learning methods. Also, learning must be more effective and prompter in online than in a physical face-to-face session. Students enjoyed the online learning method, which may be more effective than the conventional person-to-person teaching approaches. For example, academics share their screens for practical demonstrations that students could follow on their laptops, and consequently respond to problems associated with their course. This screen-sharing approach may have fostered an increased the independence among students compared to when they would ask each other for help in a physical group environment. The students may also solicit help from their colleagues in more subtle ways, such as posting queries or questions in their online chat groups, thereby feeling less self-conscious than when they raise their hands amid their peers in classroom environments (Davison, 2020).

Thaba- Nkadimene (2020) reviewed higher education prefaces of academic and research-based responses to the research question ‘What are the challenges of implementing e-learning in rural HEIs in South Africa?’, focusing on the Multimodal Learning and e-learning protocols developed during COVID-19 lockdown in rural and under-privileged South African HEIs. The researchers stated that e-learning refers to learning with the use of technology and of the internet. Therefore, e-learning can be defined as “the use of technology to deliver learning and training programmes”.

Jereb and Šmite (2006) defined e-learning as the use of information and communications technology in the operationalisation of synchronous/asynchronous learning activities. The academy and students believe that e-learning broadens access, increases flexibility and is a preferred modality due to its cost-effectiveness (Ellis, 2009). The main challenges faced by students from poor family backgrounds are having access to educational technologies and internet connectivity (Abdullah, 2016). The COVID-19 era has compelled HEIs across the world to shift from traditional strategies of curriculum delivery to digital platforms, requiring drastic changes from the FTFL that took place within four-walled lecture halls, despite the inequality among countries and institutions, and the unveiled and exposed students (Mahaye, 2020). Mahaye (2020) further elucidated that navigating blended learning that combines physical contact learning with online and virtual learning was not a novelty for privileged HEIs and students, because teaching and learning continued during COVID-19 lockdown without

spectacular challenges for such privileged institutions and students COVID-19. More privileged institutions experienced a minimal loss of learning time during the pandemic, while it was a challenging task for the less privileged institutions to put infrastructure and plans in place to ensure that the academic year was not lost due to access challenges.

Nearly 80% of the South African students in HEIs were isolated during phases 4 and 5 of the COVID-19 lockdown, with no teacher-learner interaction, relying on the TV and radio media, when such devices were available (Spaull, 2013). Similarly, public HEIs and especially the disadvantaged institutions from apartheid South Africa, experienced a lot of challenges and could not easily transit knowledge through virtual and online learning without existing learning platforms, thereby being limited by the HEIs' infrastructural capacity, lack of digital skills of faculty members, and the critical access challenges experienced by students.

These historically disadvantaged HEIs experienced technological, infrastructural and academic staff capacity limitations, once many of the HEIs used Blackboard Learning Management and had limited internal capacity. According to Pholotho & Mtsweni (2016), to ensure continued learning during Covid-19, the Blackboard function must be incorporated to enhance interactive learning. Additionally, the lack of interactive learning infrastructure was aggravated by the lack of digital skills of the faculty members, as has been previously reported (Lekgothoane & Thaba-Nkadimene, 2019). According to Harding et al. (2018), stated that the lack of time is a considerable barrier to staff usage of the VLE and staff usage is primarily for the distribution of resources, communication and assignment submission. As an intervention strategy, the university started providing Blackboard training that included Introduction to Blackboard, Blackboard Ultra, and Blackboard Assessment. Access challenges faced by students in HEIs were identified as the biggest challenge and required increased infrastructure quality. HEI students did not have laptops and lacked internet connectivity in remote rural communities. Following a promissory note, the Minister of Higher Education was obliged to provide students with laptops and data. However, helping students residing in deep rural areas where there is no internet connectivity was still a challenge. This raised resistance to continuous teaching and assessment by students and assessment was put on hold by the Student Representative Councils (SRC) until all deserving students got laptops and data. In support, Mafolo (2020) reported a limited access to university sites among students staying in remote areas without internet and those in disruptive environments that militated against meaningful learning. Examples of these institutions include the University of Limpopo, Wits, and the University of Johannesburg, illustrating the dichotomies in access and resource availability.

This paper has reviewed numerous contributions of empirical studies conducted by researchers, which elucidate the positive and negative transformations in HEIs during the Covid -19 period. Paradigm shifts from FTFL to online (remote) learning and teaching to reduce some of the learning challenges faced during COVID-19 period are recommended to HEIs. These paradigm shifts involve technology, culture, and human behaviour, where important viewpoints must be considered. According to Nachit and Belhacen (2020), shifting to online learning is the

most suitable approach for understanding the phenomenon and addressing emerging questions (Creswell et al. 2017). According to Gustafsson (2017), multiple case studies are more likely to provide valuable insights than single case studies. This paper reviewed empirical literature from other researchers that studied transformation within HEIs during the COVID-19 era.

## CONCLUSION

The effects of the period after the onset of the COVID-19 pandemic, and the use of technologies and skills that foster online education present exceptional opportunities to transform HEIs on the global scale. The importance of online teaching has increased and will continue even in the post-COVID-19 pandemic. Based on this premise, this paper revealed the usage of technological platforms and tools to support online knowledge attainment strategies (e.g., streaming conferences, video-conferencing tools, web-based learning platforms, educational apps, virtual presentation, online curricula, online messaging tools and others) to support new methodologies that foster e-learning. Online learning, which was hastily forced due to COVID-19 circumstances, caused various players involved in the learning processes in HEIs to experience adaptation challenges. Hence, HEIs consider these challenges and mobilise resources to overcome them in the shortest possible time. In addition, e-learning processes must be explained and the required technical training and support must be provided to academia in general. It is not yet envisaged what implications the shift to online learning and teaching will have on HEIs on the global scene. Nonetheless, HEIs should develop specialised e-learning technologies to harness the use of tools that enhance teaching and learning expectations on the global scene. This paper thus reviewed several studies on the transformations of HEIs faced by COVID-19, while considering the positive and negative effects associated with online education during the COVID-19 era. On this note, the authors recommend that more studies be conducted on workable education models that can be adapted to current and unanticipated changes in the higher education sector due to the lack of preliminary concerns, thereby promoting a conducive learning environment. Further investigative studies and initiatives channelled towards reducing the COVID-19 impacts will contribute with knowledge and provide important future directions in the advancement of higher education.

## Acknowledgement

The authors wish to acknowledge the funding granted for this research by the Directorate of Research and Innovation Department, Walter Sisulu University, Mthatha, South Africa.



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