The Covid-19 Pandemic:
Online Teaching and Learning at Higher Education Institutes

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Abstract. The most recent public health emergency of global concern has presented itself as the Covid-19 pandemic, which began in late 2019 Wuhan, China and has rapidly spread around the world. This disease has received extensive global attention due to the rapid rate of transmission between individuals, with the elderly easily affected. Countries, economies and sectors around the world faced immediate closure to mitigate the infection rate with scientists constantly searching for a means to eradicate the novel coronavirus disease (Covid-19). The education sector was one of the sectors significantly affected by the onset of the pandemic due to the vulnerability of its setting. UNESCO (2020) reported that as of the 6th of April 2020, 1,576,021,818 billion students were affected across 188 countries at all levels of teaching and learning. As a result, the immediate implementation of online teaching and learning modalities were required with a primary focus on maintaining a standard of teaching and learning that met the needs of both academic staff and students. However, due to the socio-economic challenges faced by South Africans, the education sector experienced numerous challenges in the implementation process of online teaching and learning modalities (HEIs). This paper seeks to review the challenges experienced by academic staff and students with the implementation of online teaching and learning modalities at higher education institutes across South Africa amidst a global pandemic. Future research suggestions include a comprehensive research study on the extensive effects of the Covid-19 pandemic on higher education institutes.

Keywords. Pandemic; Covid-19; Higher education; Online education; Education modalities; Strategies

1. Introduction

The 2019 novel coronavirus pandemic is the greatest and most defining global health crisis of our time. The World Health Organisation issued a statement on the 31st of December 2019 following a cluster of pneumonia cases in Wuhan City, Hubei province of China. The outbreak was later identified as a disease caused by a newly identified severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2); a disease similar in nature to the severe acute respiratory syndrome (SARS) of 2002 and the Middle East respiratory syndrome (MERS) of 2012. Researchers believe that the virus is easily transmitted through droplets from an infected person. As a result, due to the ease of transmission and complex genetic nature of SARS-CoV-2, it has resulted in difficulty in sourcing treatment and in the development of a preventive vaccine [23]. On 11th of March 2020, the World Health Organisation (WHO) declared 2019 novel coronavirus as a global pandemic (COVID-19) due to the rapid rate at which it has spread and the devastating effect it has had on human lives around the world. As of the 26th of August 2020, 24,107,605 million people across the world have been infected with the disease with 824,548 thousand confirmed deaths. Since its emergence, the virus has spread across the globe [26][6][36].

The principal focus of the Covid-19 pandemic continues to remain on the human impact and the universal efforts that has been employed to decrease the spread of the virus and in creating a vaccine.
However, the scale of the pandemic has created an immense impact on the South African economy. The United Nations Development Plan [30], highlights that the pandemic is considerably greater than a global health crisis. It is deemed to be an unprecedented socio-economic crisis that has the ability to create long-lasting economic, political and social effects.

The first confirmed case of the 2019 novel coronavirus in South Africa, was reported on the 5th of March 2020. A month later, the number of confirmed cases had increased significantly to 1,585. Due to complexity of the 2019 novel coronavirus, medical sector professionals suggested that the practice of social distancing amongst individuals was considered as the most ideal means to mitigate the spread of the virus. As a result, on the 15th of March 2020, in the Presidential address to the nation, President Cyril Ramaphosa declared the pandemic a National State of Disaster with the implementation of a national lockdown on the 26th of March 2020. This was a bid to ensure that the level of transmission is controlled and the curve flattened. As of the 26th of August 2020, the number of confirmed cases in South Africa has risen to 613,017 with a total of 13,308 deaths [9][10][21].

The national lockdown has been effective in limiting the spread of Covid-19; however, it has had an immense impact on the South African economy. Numerous industry sectors have been shut down, except those considered as essential services. Overnight, educational institutions had been temporarily shut down in an effort to manage the spread of the Covid-19 pandemic [8]. A total closure of educational institutes in approximately 192 countries worldwide, had impacted 91.4% of enrolled students.

According to UNESCO [27][28], over 1.6 billion students worldwide are currently requested to remain out of educational institutions due to social distancing measures. Approximately 9,800,000 million students in Africa are affected, with South Africa having the fourth largest number of students affected by the Covid-19 pandemic. Currently approximately 22,000,000 million students in South Africa that are registered at pre-primary, primary, secondary and tertiary institutes are affected by the national lockdown.

The Covid-19 pandemic has changed the traditional landscape of teaching and learning at educational institutes, with higher education institutes having to migrate from face to face interactions to a transformative online teaching and learning. However, over the past few decades, private sector and higher education institutes in South Africa have developed modalities that aid in the transition of education practices from traditional face to face interaction; to a complete online and multimodal approach. This transition was an effort to meet sustainability goals, to maintain a competitive edge in the market and to enable the ease of access to education to a diverse student population [11][15].

According to the United Nations Development Plan [29], alternative teaching and learning modalities are seen as a valuable in the current education landscape, to ensure that students have consistent access to learning and development during the national lockdown that is in keeping with the institution and industry standards, however the forced implementation of alternative teaching and learning modalities have not considered the socio-economic and political landscape that are experienced by everyday South Africans. This paper seeks to review the challenges of online teaching and learning modalities that have been implemented at higher education institutes across South Africa.

2. The Impact of Covid-19 at Higher Education Institutes

UNESCO Director-General Audrey Azoulay [28][29], highlights that never before has the world witnessed an educational disruption such as this with ramifications on the educational system that are
certain to have long lasting effects. Kekić et al. [14] further reports that the implemented lockdown at educational institutes results in the loss of long periods of learning that can result in both temporary and permanent damage on the educational system.

UNESCO, [28][29] envisages that post the Covid-19 era; the education of an African student would be the most affected, due to economic, socio-economic and technological backwardness of African countries. Amidst the outbreak of the Covid-19 pandemic, South Africa has approximately 5,000,000 million students enrolled across its various public and private higher education institutions, with 98% of teaching and learning affected. As a result, the academic calendar of institutions has been thrown into a total state of dismay with graduations, convocations, classes, examinations and research programs being cancelled and or postponed.

The Departments of Higher Education and Training has therefore called for an emergency paradigm shift in teaching and learning modalities across higher education institutions, that requires thoughtful and accurate decision-making processes that considers the current state of education in South Africa along with its economic, socio-economic and technological challenges. The modalities proposed lends itself towards an immediate online education system as a solution to this crisis [28][29].

However, an online educational system is not as simple to implement in a country where only 24% of the population has access to the internet. Poor connectivity, exorbitant internet costs and recurrent power interruptions are daily challenges faced by both academic staff and students at higher education institutes. Major institutions have partnered with government and internet providers to overcome this challenge by negotiating zero-rated access to educational websites. However, it is essential that higher education institutes note that online education modalities are not an ad-hoc solution to face-to-face teaching and learning [25].

2.1. Online Teaching and Learning Challenges

The South African education system remains in a continuous state of transformation; as the government struggles with the legacies of the past, whilst pursuing opportunities for the future [34]. Due to the rapid emergence of the Covid-19 pandemic, South African higher education institutes have implemented online educational modalities on a scale that has never been seen before in history due to the Covid-19 pandemic [7].

Online educational modalities are not considered to be a new phenomenon, yet in a country like South Africa that is plagued by economical, socio-economic and technological constraints, institutions have been faced with an overnight challenge in the development and implementation process. Over 12 million children reside in households that earn a monthly income of less than R350; with studies highlighting that the overall educational performance exemplifies poor student performance being attributed to the availability of resources and social class [20][24].

Regardless, immediate decisions were taken by higher education institutions to adopt an alternative teaching and learning modality. This has invited various inquiries regarding the effectivity of the modality within a South African landscape. The challenges of an online education modality present itself in in the impromptu start of online programmes due to the absence of conventional teaching and learning practices, inadequately trained academic staff, inadequate support services and the insufficient teaching and learning resources. Further challenges directly attributed towards connecting students that did not have immediate access to technology; and with students that reside in
diverse geographical areas. This has created even more complexities regarding the availability of internet speed, expenses on data, access to smart devices and in ensuring that the quality in teaching and learning is maintained [18][25].

However, the decision to conduct online teaching and learning modalities has added diversity and value that will assist students in becoming knowmads that are fit to work in any context. As Moravec [19] states that a society needs knowmadic workers are not rigid in structure. Society has to face that the reality that the jobs educational institutions prepare us for as bureaucrats, or workers are disappearing; and are being replaced with knowledge based and innovative work. This new era requires individuals to function contextually. Individuals that are available and willing to work anywhere and anytime, with almost anyone. These individuals are referred to as knowmads.

3. Research Approach

The research approach adopted for this study identified the Scopus and Web of Science (WoS) as data sources due to their comprehensive and overarching coverage of research publications [12][13]. The Scopus and WoS databases were considered as a foremost scientific research database, providing researchers with prominent academic literature in a scientific domain [5][22][32][35]. A robust screening and selection process were conducted to filter pertinent publications from the database based on the applicability of the publications.

The retrieval of research publications was conducted on the 19th of August 2020, with 1544 data sources and publications obtained. A further keyword search was conducted to sieve through related publications, with descriptors such as “Higher Education”, “Pandemic”, “Covid-19”, “Teaching”, “Learning”, “Online” and “Strategies.” Journals articles and conference proceedings are generally considered as reliable sources of literature review, therefore, the literature selection process focused predominantly on journal articles and conference proceedings that highlighted the impact Covid-19 is having on the higher education sector, the modalities for teaching and learning and the challenges experienced by staff and students within the higher education sector.

The primary selection process highlighted a total of 1544 publications. A second pronged selection and review process was further conducted by reviewing the titles, abstracts, and keywords of the 1544 publications of which 164 publications were selected. A further selection and elimination process were conducted which employed three criterions to select publication that were aligned with the research topic and conference sub theme, where 36 relevant publications were referred to for the literature review as well as the modalities and strategies developed by higher education institutions in South Africa.

The filter criteria were as follows;

1. Articles that did not present studies that took cognisance of the Covid-19 pandemic.
2. Articles that did not present studies that were related to higher education policies, procedures and practices in respect to teaching and learning.
3. Articles that did not present studies that were written in the English language.
4. Conclusion

The novelty of the 2019 coronavirus pandemic and the complexity of the disease results in no existing vaccine available to treat the virus. Therefore, the disease is expected to be present in the global society for some time. Various modalities have been implemented such as social distancing measures, in an effort to curb the spread of the disease and mitigate fatalities. However, most of these modalities are just as novel as the disease itself and will take an extended period of time for sectors to return to a sense of normality or full recovery. One such sector affected by the pandemic was the higher education sector with overnight closures of thousands of institutions in an attempt at enforcing social distancing measures [1].

In a presidential address, President Cyril Ramaphosa declared the pandemic as a National State of Disaster and implemented an immediate national lockdown as of the 26th of April 2020, with the education sector suspending services as of the 18th of March 2020. The Covid-19 pandemic has required an immediate response in the shift from on-campus face to face classes to digital online teaching and learning modalities. In a matter of days, teaching and learnings modalities were required to be amended and developed. Higher education institutions were then presented with surmounting challenges in the process of implementation of online teaching and learning modalities [16].

The unexpected outbreak of the pandemic has required academic staff, administrators and students to swiftly adapt to a new situation; with staff and students being expected to undergo immediate remote training in technology-enhanced teaching and learning. Unfortunately, the pandemic significantly illuminated the inequalities that exist within South Africa. Economic, socio economic and technological challenges are ever present in the current education system, with students being significantly impacted [9][10] [21].

The pandemic has significantly enhanced the digitalisation of teaching and learning practices within the higher education system whether it has been welcomed or not. Therefore, future teaching and learning modalities may result in the lasting formation of hybrid campuses; campuses that offer autonomy and flexibility for students as well as educators [33]. The Covid-19 pandemic has afforded the South African government a golden opportunity to correct the irregularities and inequality in the higher education system with the vision to be radical, creative, innovative and versatile in addressing the challenges that exist in the higher education system. It is imperative that the socio-economic impact of the pandemic in a post covid-19 era be addressed and included in the teaching and learning modalities, until the complete recovery of the South African higher education system is achieved.

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