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DOI: http://dx.doi.org/10.18820/2519593X/pie.v39.i1.24
e-ISSN 2519-593X
Perspectives in Education
2021 39(1): 390-409

PUBLISHED:
12 March 2021
RECEIVED:
17 November 2020
ACCEPTED:
20 January 2021

MANAGING HIGHER EDUCATION INSTITUTIONS IN THE CONTEXT OF COVID-19 STRINGENCY: EXPERIENCES OF STAKEHOLDERS AT A RURAL SOUTH AFRICAN UNIVERSITY

ABSTRACT

The COVID-19 pandemic poses unparalleled challenges to education systems around the world, all of which have devastating effects. While these effects have been troubling in developing and developed countries, rural education systems in developing countries have particularly been most susceptible to collapse. The unique context of rural universities makes it difficult to implement approaches similar to those implemented in the developed world and/or more urban-based institutions. Underpinned by Von Bertalanffy's Systems Theory, which argues that organisations are composed of systems that have goals to achieve, this paper thus sought to explore the coping mechanisms instituted at a rural South African university in the face of the COVID-19 pandemic. It further sought to establish how the university has managed to cope with the challenges that are unique to rural universities as exacerbated by the onset of the pandemic. Underpinned by a post-positivist paradigm, the study employed a mixed methods approach through which data was collected using online questionnaires and interviews. The findings of the study revealed that although the institution had put some measures in place to ensure that the university is efficiently managed in the context of COVID-19 stringencies, university stakeholders are still faced with insurmountable challenges that range from campus safety, cancellation and postponement of examinations, as well as weakened research and international collaborations. Based on the findings of the study, it is recommended that South African institutions and the government need to invest more on safety infrastructural facilities that will ensure that rural university stakeholders are safe. Furthermore, there is a need for technical infrastructural facilities that enable the shift from conventional assessment, teaching and learning approaches to a more blended educational model.

Keywords: *Rural universities; COVID-19; education; learning; pandemic; remote learning.*

1. INTRODUCTION AND BACKGROUND

The coronavirus pandemic has triggered widespread detrimental effects across all sectors of society, including the higher education sector (Hedding *et al.,* 2020; Fay *et al.,* 2020). South African higher education institutions have been similarly affected, yet the impact has been most pronounced in rural institutions (Dube, 2020; Ogunkola *et al.,* 2020; Phillipson *et al.,* 2020; UNESCO, 2020a). While it is difficult to forecast the impact of the COVID-19 pandemic, it is clear that the effects of the pandemic will continue to reverberate for a long time to come (Zahra *et al.,* 2020; Moodley *et al.,* 2020; Mhlanga & Moloi, 2020). In times of crises, it is not uncommon for governments to speedily formulate and enact policies as a strategy of reducing losses (Clary, 1985). As such, the hasty implementation of lockdowns around the world was proof of the attempts at formulating policies and saving lives (Hedding *et al.,* 2020; Zahra *etal.,* 2020).

In March 2020, an unexpected nation-wide lockdown was instituted in line with World Health Organization (WHO) recommendations that dissuade physical meetings as a way of curtailing the pandemic in South Africa (Omodan, 2020). Similar to other parts of the world, education institutions in South Africa were forced into an induced lockdown in which all operations, including teaching and learning, were halted abruptly. The effect was compounded for rural institutions that did not ordinarily possess the capacity to provide alternative teaching and learning systems (Ebrahim *et al.,* 2020; Hedding *et al.,* 2020; Roy *et al.,* 2020). Prior to the onset of the pandemic, there had already been calls for the education system in South Africa to adopt online technologies as a response to the fourth industrial revolution (4IR) (Mncube, Olawale & Hendricks, 2019).

Thus, stakeholders (namely university managers, academic staff and students) in the education sector in South Africa were prompted to adopt online options of learning, thus prompting the evident need to speed up efforts towards the 4IR (Mhlanga & Moloi, 2020; Carvalho *et al.,* 2020). Yet the right to education has been heavily skewed owing to the lack of equitable access to learning due to the lack of online learning options into which institutions were rushed without adequately planning (Moodley *et al.,* 2020; Carvalho *et al.,* 2020; Dube, 2020; eLearning Africa, 2020). The disparity between rural and urban institutions has also been exacerbated by the limited educational resources in rural South Africa and increased vulnerabilities that are extant in rural communities (Omodan, 2020; Dube, 2020; Mhlanga & Moloi, 2020). As such, this paper sought to explore the coping mechanisms instituted at a rural South African university in the face of the COVID-19 pandemic.

2. LITERATURE

2.1 Exploring the nature of COVID-19 in education

After the first infections in China at the end of 2019, the Coronavirus disease (COVID-19) continues to spread across the world. The spread of COVID-19, among several disruptions to normal life, led to the temporary closure of schools in over 172 countries and was thus declared a pandemic by the World Health Organization (WHO, 2020; Sahu, 2020; Mhlanga & Moloi, 2020). As of 29 March 2020, the virus had spread to more than 177 countries and infected more than 722 435 people, resulting in more than 33 997 deaths (Sahu, 2020; Khachfe *et al.,* 2020). Regions severely affected by major outbreaks include China, Europe, Iran, South Korea and the United States (Khachfe *et al.,* 2020). On 13 March 2020, the WHO stated that Europe had become the new epicentre of the pandemic. Thus, China took

aggressive action and succeeded in reducing new cases. Unfortunately, this reduction was not the case in other parts of the world, including Iran, Italy, the US and other European countries (Remuzzi & Remuzzi, 2020). By mid-April 2020, approximately 1.725 billion students globally had been affected by the closure of schools and higher-education institutions in response to the COVID-19 pandemic (Reddy, Soudien & Winnaar, 2020).

In South Africa, the first confirmed case of COVID-19 was recorded on 5 March 2020 (Mhlanga & Moloi, 2020). The fear of the predicted rate at which the pandemic was to infect people motivated the South African government to declare this pandemic a national state of disaster in terms of the Disaster Management Act (South African Government, 2020), which instituted a national lockdown. The lockdowns in response to COVID-19 in several countries have interrupted conventional schooling with nationwide school closures, the majority lasting at least 10 weeks (Schleicher, 2020). While the educational sectors have made concerted efforts to maintain the continuity of teaching and learning during this stringent time, the majority of students have had to rely solely on their own resources to continue learning remotely through the internet, television and other social media platforms. Educators have also had to adapt to new pedagogical concepts and modes of lecture delivery in which many have not been trained. In particular, learners in the most marginalised groups, who do not have access to digital learning resources or lack the resilience and engagement to learn on their own, are at risk of falling behind (Schleicher, 2020).

However, before the outbreak of the COVID-19 pandemic, the world was dealing with a learning crisis, evidenced by high levels of learning poverty (The World Bank Education Global Practice, 2020). This crisis caused by the COVID-19 pandemic further exposes the many inadequacies and inequities in the education systems that ranges from access to the broadband and computers needed for online education and the supportive environments needed to focus on learning, up to the misalignment between resources and needs (Schleicher, 2020; McDonald, 2020).

2.2 Impact of COVID-19 on higher education institutions

The outbreak of COVID-19 has caused a huge negative impact on higher education institutions because the closure of colleges and universities not only interrupts the teaching for students but the closure also coincides with many exams being postponed. As a coping mechanism, some universities are replacing traditional exams with online assessment tools (Weeden & Benjamin, 2020). There have been sudden changes in lesson delivery and school activities due to social distance measures to prevent explosive transmission of the virus, as such, the learning system has shifted from a face-to-face learning system to an online learning system. Thus, the use of the most important pandemic precaution called “social distancing” or “physical distancing” has attempted to reduce interpersonal contact and thereby minimise the kind of community transmission that could develop quickly in dense social networks like the university campus (Weeden & Benjamin, 2020). According to Mittal (2020), higher education institutes (HEIs) are struggling with the timely completion of the semester and conducting examinations. Similarly, planning for the next academic session while dealing with financial constraints due to reduced tuition fee payment, school safety, partially due to a potential drop in student enrolment and placements and the sudden shift to online pedagogy were among the biggest concerns emanating from the COVID-19 pandemic (Mittal, 2020).

For some universities, the online mode of delivery was not new, unlike others, which were encountering such forms of teaching for the first time. The transition was quick and

not much time was available to properly consider the organisation of the new forms, noting that the quality of teaching and learning in these new circumstances needs proper attention (Aristovnik *et al.,* 2020; Sahu, 2020). On the other hand, students from undeveloped, remote and rural areas had problems with poor Internet connectivity or even a lack of electricity (Aristovnik *et al.,* 2020). Thus, Sahu (2020) posit that the COVID-19 pandemic may have a serious impact on the careers of 2020 university graduates because of the major interruptions in teaching and assessment in the final part of their studies. Similarly, they may likely graduate late due to the postponement of the final examination and/or face severe challenges of the global recession caused by the COVID-19 crisis (Sahu, 2020).

According to Al-Rabiaahab *et al.* (2020), the COVID-19 outbreak has disrupted the lives of many people across the world and it has also caused a tremendous level of stress among the university fraternity, inclusive of students. This stress may lead to unfavourable effects on the learning and psychological health of students (Al-Rabiaahab *et al.,* 2020; Sahu, 2020). Similarly, International students staying far from home are not only worried about their health, safety and education, but they also have numerous concerns for the wellbeing of their families (Zhai & Du, 2020).

Thus, the COVID-19 pandemic has revealed the deficiencies of the current system in higher education institutions and the necessity for more educators training in digital technology in order to fit into the rapidly changing education system of the world. In the post-pandemic situation, the use of eLearning and virtual education may become an integral part of the higher education system (Rashid & Yadav, 2020).

2.3 Challenges faced by rural universities in the wake of the COVID-19 pandemic

The educational institutions are facing a challenge to adapt to this change brought about by COVID-19 and trying to choose the right approaches, strategies, methods and technologies for educating and involving their students. The closure of campuses and the sudden switch from face-to-face education to disconnected instructions was an immature experiment in a lengthy process to offering online education that includes effective student engagement tools and teacher training (Nedelcu, 2020). Rural universities face the twin-challenge of rolling out online learning for thousands of students and finding money to pay salaries and meet their financial obligations at a time when major revenue flows are closed (Nganga, Waruru & Nakweya, 2020).

The universities rely more on students' tuition fees to fund their operations because the financial support received from the government is not sufficient to meet their needs (Nganga, Waruru & Nakweya, 2020; Mittal, 2020). Due to the pandemic, universities were shutdown and all methods of conveying knowledge were shifted towards online teaching in an unprecedented effort to ensure the continuity of education (Nedelcu, 2020). Thus, leading to a forced break from the established principles in organisation of the educational activities, from its usual routines and structures.

The pandemic has uncovered the weaknesses and deficiencies of the present education systems and has also emphasised the need for digital literacy development, particularly in times like these, for developed and developing countries (Rashid & Yadav, 2020). The present condition has challenged deep-rooted notions about the role of higher education institutions in the mode of delivery, providing quality education, the importance of lifelong

learning, accessibility and teacher's views about the type of learners (Rashid & Yadav, 2020). This present condition may provide insight to the policymakers and teachers for general improvement of educational systems worldwide. Adapting and relying on eLearning during the COVID-19 pandemic may be a reason of slight change in adopting more online elements in the teaching by the teachers. This, however, has many practical problems and limitations, in terms of availability of digital technologies for education because a vast "digital inequality" exists in the societies (Rashid & Yadav, 2020: 2). Therefore, one cannot assume that all students, as well as teachers, would have access to internet connectivity and associated powerful devices outside of their university, to be able to communicate.

According to Sahu (2020), although many teachers and students were excited by the move to the online delivery mode, there is always a chance that some faculty members who are not techno-savvy will not be able to cope with this mode. Thus, the transition to the online mode has raised several questions for universities about their capability to deal with the existing technology at a time when working at home is increasingly becoming a difficult task. Even though higher institutions welcome the shift to online learning, Dill, Fischer, McMurtrie and Supiano (2020) highlighted the challenges for higher institutions, which include inadequate infrastructure or resources to facilitate teaching and learning with immediate effect, unequal access of students to laptops and internet facilities, impossibilities in teaching practical and labs, music and art courses online. Nonetheless, while teaching and learning moved online, several universities have already suspended the semester-end final examinations and continuous assessment moved on along with the online classes. Thus, applying assessments online on those courses designed for face-to-face learning becomes a challenging task (Sahu, 2020).

Affordability is another factor that limits the access to eLearning with students from economically weaker sections facing a greater burden (Aristovnik *et al.,* 2020; Sahu, 2020; Mittal, 2020). The impact of accessibility and affordability can have serious implications on students in the higher education system unless student-friendly government policies are in place that can ensure affordability and accessibility of the internet to students (Haleem *et al.,* 2020). The students face major hurdles with remote learning as face-to-face communication is more conducive for the learning process, presenting a better opportunity of sharing knowledge and asking for help, "easier" and more interactive (Miliszewska, 2007). Contrarily, in virtual classes, the camaraderie and sense of belonging are limited. Thus, students who have less ability to self-regulate or study autonomously struggle with no teacher providing in-person support. As a result, online videos, digital content and discussion forums may not provide a holistic teaching-learning outcome (Miliszewska, 2007).

In addition, the career plans of many research students and postdoctoral researchers are at risk due to this sudden interruption in their research plan by the pandemic. The universities and funding bodies will be under financial strain in the coming months and the non-COVID projects may lose importance and focus from these agencies (Rashid & Yadav, 2020). The recruitment of international staff and the exchange of skilled researchers is a huge challenge that may continue to exist for the coming months due to travel restrictions (Rashid & Yadav, 2020).

Conclusively, Sahu (2020) posited that as the outbreak continues to unfold, the safety and well-being of students and staff members should be the highest priority. Universities should emphasise mental health support by updating the health guidelines and providing online

guidance and lectures to offer strategies for managing stress when coping with the pandemic (Sahu, 2020). Any student experiencing feelings of heightened anxiety about COVID-19 should be provided with proper psychological support well in time (Al-Rabiaahab *et al.,* 2020).

2.4 Coping strategies employed by rural universities in the context of COVID-19 stringency

Given the prolonged and massive closure of schools, universities and other learning institutions, and a shift to remote learning in many countries in the world, a key question posed to policy- and decision-makers is how to manage timetabled assessments and exams. In particular, those related to end-of key levels, school leaving, university entrance exams and gateways for job, and how to end the school year smoothly are frequently asked questions (UNESCO, 2020b). Thus, based on the analysis of data collected by UNESCO (2020b) from 73 countries worldwide that reacted to high-stakes exams during this time of school, university and other learning institution closures, six policy recommendations were highlighted. These recommendations regarding coping strategies include a whole-of-government approach, broad consultation and public communication, assessment options to ensure fairness, high-stakes examinations, online examinations and differentiated approaches for technical and vocational education training (TVET) (UNESCO, 2020b). Similarly, Nedelcu (2020) posited that the COVID-19 pandemic had forced higher education institutions and universities to adapt to the rapidly changing situation in a way that was unimaginable. As such, universities have adopted different strategies to reach out to students efficiently, which include:

- elaboration of support documents, like methodologies, guides, resource packages for moving teaching to the online environment;
- using specialised platforms for online learning and official websites that centralise the initiatives in this field;
- supporting students and parents through frequent messages, explanations, questions and answers (the use of email and social networks);
- instating specific measures meant to achieve equality in education, mostly because the vulnerable groups, during crisis situations, become even more vulnerable (acquiring computers and telecommunication packages by the authorities, for families in difficulty);
- reorganising assessment procedures (adjusting, annulling or reprograming exams); and
- promoting decentralised solutions, based on procedural decisions of local authorities.

According to Rashid and Yadav (2020), many universities have adopted distance learning as a means of pacifying for loss of time in school. Therefore, the development of e-content and assessment and reporting that is not properly planned and forethought are used in the higher education institutions (Rashid & Yadav, 2020). As such, in order to achieve focused learning outcomes and develop effective eLearning methods, educators should be provided with professional autonomy and trusted with their judgement, and ensure clear and compassionate communication with all the stakeholders of the higher education (Rashid & Yadav, 2020).

3. THEORY UNDERPINNING THE STUDY

Von Bertalanffy's Systems Theory (1968) underpins this study. This theory argues that organisations are composed of systems that have goals to achieve (Mele, Pels & Polese, 2010; Katz & Kahn, 1978; Von Bertalanffy, 1968). The theory argues that a system has four

main features, namely inputs, transformation processes, outputs and feedback, and these four features are interdependent (Mele *et al.,* 2010; Katz & Kahn, 1966). "Inputs "connote the capital and human resources that are essential to run an organisation, and that have to be carefully planned, organised, motivated and controlled if goals are to be realised (Von Bertalanffy, 1962; Von Foerster, 1981). "Transformation processes" are the guidelines and directions that regulate the use of resources (Katz & Kahn, 1978). These are essential because they provide clear guidelines and expectations of how activities need to be carried out and they also give structure to an organisation, without which the organisation may collapse due to abuse of resources, chaos and mismanagement (Mele *et al.,* 2010; Ashby, 1958; Von Bertalanffy, 1962). "Outputs" in the Systems Theory denotes the end products and services that are offered by an organisation that justify the worth of resources that are invested into a system (Katz & Kahn, 1966). Outputs are measured in line with objectives that are set by the organisation (Mele *et al.,* 2010; Ashby, 1958; Von Bertalanffy, 1962). Lastly, "feedback" comes from the human resources carrying out the processes and other areas affected by the organisation (Katz & Kahn, 1978). This is mainly done through research that measures improvements in different aspects of the system (Mele *et al.,* 2010; Von Bertalanffy, 1968; Von Foerster, 1981). The systems theory is important for this study because it acknowledges the interrelations of different stakeholder subsystems that are operational at universities as opposed to viewing them as isolated individual components in the pursuit of the education agenda. The theory also assisted in tracking the inputs and transformation processes implemented by the rural university in comparison with the concomitant outputs and feedback in the context of managing the rural university in the face of the COVID-19 stringency.

4. STATEMENT OF THE PROBLEM

The COVID-19 pandemic has significantly impacted education institutions around the world and South African higher education institutions have not been spared (Dube, 2020; Mhlanga & Moloi, 2020). This is because critical higher education operations were abruptly shifted from face-to-face interaction to remote interaction with very little planning for this shift (Dube, 2020; Omodan, 2020). These rushed attempts to transition have resulted in several challenges to the operations of higher eduaction institutions for staff, students and administrators. As such, the impact of the COVID-19 pandemic on university operations has been seismic, especially in light of the specific need for contact-based teaching and learning that is required by some practical subject areas (Guangul *et al.,* 2020; Cooper & Tschobotko, 2020). This impact has been especially pronounced in rural institutions whose catchment area is predominantly the rural and poor communities of South Africa where access to online resources is scant (Mhlanga & Moloi, 2020; Carvalho *et al.,* 2020). For students who originate from these rural areas and institutions in rural South Africa, remote learning during the height of the lockdown revealed the deep-seated inequalities that they grapple with compared to their urban counterparts (Mhlanga & Moloi, 2020; Moodley *et al.,* 2020). This study therefore seeks to explore the experiences of stakeholders at a rural South African university regarding the management of their institution in the wake of the COVID-19 stringency.

5. RESEARCH QUESTION

What are the experiences of rural South African university stakeholders in managing education enterprise in the context of COVID-19 stringency?

6. PURPOSE OF THE STUDY

The purpose of the study is to examine the experiences of rural South African university managers, academic staff and students in managing education enterprise in the context of COVID-19 stringency.

7. RESEARCH DESIGN AND METHODS EMPLOYED

7.1 Research paradigm

This study was underpinned by the post-positivism paradigm because the paradigm opens the door to multiple methods and different worldviews as well as to different forms of data collection and analysis (Kivunja & Kuyini, 2017). The paradigm thus enables the researchers to get a broad overview and in-depth picture on the experiences of rural South African university stakeholders in managing education enterprise in the context of COVID-19 stringency.

7.2 Research approach

A mixed method approach was employed to gain a deeper understanding of the phenomenon under investigation. Mixed methods consist of a combination of quantitative and qualitative research approaches (Creswell, 2014). The use of the mixed methods approach for this study is to allow the researchers to accumulate as much information as possible on the experiences of stakeholders in managing education enterprise in the context of COVID-19 stringency in a rural South African university.

7.3 Research design

Based on the use of the mixed method approach, this study adopted a concurrent triangulation mixed methods design in order to get expedient information on the experiences of rural South African university stakeholders in managing education enterprise in the context of the COVID-19 pandemic. Concurrent triangulation mixed methods design uses quantitative and qualitative methods of data collection concurrently to best understand the phenomenon of interest (Creswell & Plano, 2011).

7.4 Population, sample and sampling techniques

From the selected university, participants included students, staff and university managers. In gathering qualitative and quantitative data, convenience sampling technique was used to elicit participants' experiences and information about how the institution was being managed in the face of the COVID-19 stringency. As such, the population for this study was composed of university stakeholders at a rural university in the Eastern Cape province, South Africa from which ten (10) managers, ten (10) lecturers and eighty (80) students were conveniently sampled, thus making a hundred (100) respondents. However, only four (4) managers, four (4) lecturers and sixty-nine (69) students participated, making seventy-seven (77) respondents in the quantitative and qualitative phase of the study.

7.5 Data collection instruments

The quantitative and qualitative data collection methods were used since data collection in mixed methods involves using multiple strategies, approaches and methods of soliciting information from the respondents (Creswell & Plano, 2011). The research instruments used for this study were online questionnaires and interviews for all the respondents. The

quantitative data was collected using a Likert scale questionnaire that was distributed electronically using Survey-monkey while the qualitative data include one-on-one interviews using Microsoft Teams.

7.6 Data analysis

For this study, participants in the qualitative study were encouraged to also participate in the qualitative phase for proper synthesis of data. Thus, only the data from participants who participated in the qualitative and quantitative phases were used for data analysis and as such, the participants who satisfied this criteria was a total of four (4) managers, four (4) lecturers, and sixty-nine (69) students out of the initial sample, making a total of seventy seven (77) participants .

Thus, quantitative data were analysed descriptively. According to Trochim (2020), descriptive statistics are used to describe the basic features of the data in a study because they provide simple summaries about the sample and the measures. Qualitative data from this study were analysed thematically. The data were summarised and organised based on the emerging themes, general ideas and related features of interviewees' responses.

7.7 Ethical considerations

The ethical consideration for this study mainly focused on confidentiality of the participants and informed consent. Thus, the researchers observed the following ethical considerations in order to uphold research ethics in this study:

i. confidentiality, anonymity and privacy were respected with the exception of information that alluded to harm being done to an individual. This proviso was communicated and agreed to before the start of data collection; and

ii. consent of all participants was sought. Information was provided on research aims, process and use of data before consent was sought from the respondents. The right to withdraw from the research at any point with data from that respondent not used was also specified to the respondents.

8. RESULTS AND DISCUSSION

The study sought to investigate the experiences of stakeholders at a rural South African university in managing higher education institutions in the context of COVID-19 stringency. As such, results and discussions are presented under the following sub-headings:

- Functionality of rural institutions during COVID-19
- Research, teaching and learning during COVID-19

8.1 Functionality of rural institutions during COVID-19

To elicit information regarding the functionality of rural institutions during the COVID-19 pandemic, participants were asked questions on school safety, communication infrastructures, partnership and international collaborations. Research findings concerning the impact of COVID-19 on the functionality of rural institutions revealed that although institutions of higher learning were reopened amidst the crisis, there were minimal containment measures put in place to curb its spread. For instance, a lecturer stated that:

> Our institution is partially open, but there are major disruptions. Although the university management promised to provide personal protective equipment (PPE), we still manage to come to work scared with our own protective equipment. For instance, in some shared spaces whereby you need to use a general printer at work, there are no sanitisers and yet we are promised that all will be put in place to ensure that university operations runs smoothly (Lecturer 4).

Similarly, a student reiterated the above views regarding containment measures at the university. The student stated that

> We only got a sanitiser once when we came back to the university and yet the university management had promised to provide sanitisers and masks. We do not feel safe as students, for example, some lecturers require us to submit hardcopies of our assignment in which we have to join a very long queue, which most students do not observe social distancing. It is worsened by the fact that sanitiser stands are empty; the management do not take us seriously (Student 62).

In the same vein, another student spoke about security measures put in place to curb the spread of the COVID-19 pandemic. The student posited that

> For a very long time, we have been complaining about security issues at the university. Unlike before where the non-university community members have easy access to the university, at least now security has been improved. However, issues like social distancing, wearing of masks and sanitising of hands are not being enforced at all. Also, you could see different visitors getting in and out of the residences; parties day in and out; and the rate at which students drink on campus is disheartening. It is like the securities do not even care at all (Student 49).

On the contrary, the faculty manager stated that:

> The university is trying its best and it has put in place measures to ensure stakeholders safety. Our staffs only come to work on occasional basis, and personal protective equipment (PPEs) were provided to both staffs and students. For example, each staff members of the faculty was given two face mask, and hand sanitisers were mounted within and outside the faculty building, however, students continue to vandalise the sanitising stations (Manager 3).

Research findings revealed that although the institution has put in place measures to ensure smooth operation of the university amidst the pandemic, there exist several challenges that range from student vandalism, ineffective security measures, inadequate resources, and negligence on the part of students. This finding resonates with Dill *et al.* (2020) who highlighted that the challenges of higher institutions during the COVID-19 pandemic include inadequate infrastructure or resources to facilitate teaching and learning with immediate effect, unequal access of students to laptops and internet facilities, impossibilities in teaching practical and labs, music and art courses online. Similarly, the pandemic negatively affected institutional partnerships in terms of international engagement and collaboration. A manager from the university stated:

> The pandemic hit our partnerships very hard, we have had to redirect resources in order to satisfy more localised and immediate goals. Student exchange programmes had to be halted and you can imagine the effect, resources have dwindled and all our efforts are directed at trying to ensure that the university continues to run in these uncertain times (Manager 2).

Despite the negative influence of the pandemic on the functionality of institutions, there were encouraging signs when it came to how the institutions communicate with stakeholders. Stakeholders were largely appreciative of the effectiveness of communication infrastructure with the university as it pertains to the running of the institution. An example can be drawn from a student who stated that:

> I can say because of the pandemic, communication infrastructure has been strengthened at our university. The university managed to secure modems, laptops and data for all registered students, although these laptops came late. I think that the university has done well in communication given the circumstances we are in (Student 27).

Similar views were also noted from a lecturer at the university who said:

> We have had to be creative in making sure that we communicate effectively with students and other staff. The times we are in have made us more aware of the diversity of our student population; some came from deeply rural areas where access to internet is almost a luxury. As such, we were requested to compile all learning material for the first semester, and we sent it to the faculty office. From there, the material was loaded into USB drives and it was disbursed to all our students (Lecturer 1).

A manager at the university also praised the improvements in the communication infrastructure at the university. The manager stated:

> Like every other institution, the pandemic caught us off-guard, when we closed for lockdown; most of us just thought that it was going to be for a few days. We had to make plans to ensure that the university sustained its operations during the difficult lockdown period. Students and staff managed to get 30 Gigs of data provisioned by the university. Students also managed to get learning material, which was sent to them to ensure that learning continued even remotely (Manager 1).

From the above responses, research findings revealed that the university strengthened communication infrastructure through the provision of free data, laptops and modems to students and staff to ensure that teaching and learning continues under the auspices of the new normal. The provision of these online resources made it possible for the university to remain operational when its stakeholders were forced to abruptly halt their usual contact-based operations. Thus, one could conclude that for rural institutions of learning to be functional within the context of COVID-19 stringency and other such unforeseen crises, there is need for universities to strengthen containment measures, engagement and collaboration with partners nationally and internationally as well as the provision of continued support for its stakeholders in the face of the "new normal". According to Nedelcu (2020), for the university to support and efficiently reach out to its stakeholders, there is a need for elaboration of support documents such as methodologies, guides and resource packages for moving teaching to the online environment. This is in line with Von Bertalanffy's Systems Theory of 1968 that argues that organisations are composed of systems that have goals to achieve through "transformation processes". These transformation processes are essential because they provide clear guidelines and expectations of how activities need to be carried out and they also give structure to an organisation, without which the organisation may collapse due to abuse of resources, chaos and mismanagement (Mele *et al.,* 2010; Ashby, 1958; Von Bertalanffy, 1962). Similarly, Sahu (2020) posited that the health and safety of students and staff should be the top priority. Thus, universities should place more emphasis on mental health support, provide online guidance to its stakeholders on managing stress when coping with the pandemic and prioritise the health and safety of students and staff (Sahu, 2020).

Data from the quantitative study in Figure 1 below shows stakeholders' feedback on the functionality of the institution during the COVID-19 pandemic with special consideration to school safety, communication infrastructures and partnerships and international collaborations.

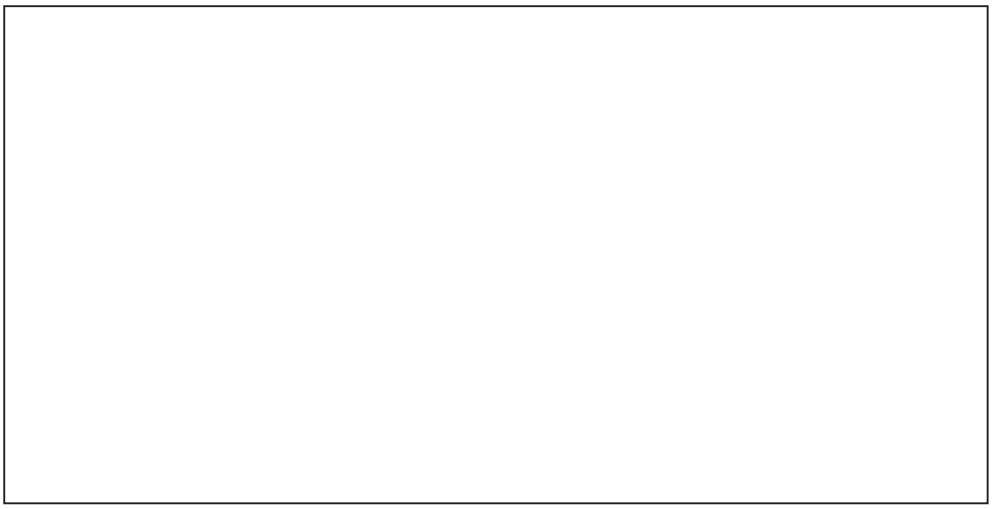

Figure 1: Functionality of a rural institution during the COVID-19 pandemic

Research findings revealed that 90.9% of the participants indicated that the COVID-19 pandemic had negatively impacted their safety at the institution of learning, while 6.5% of the participants revealed that the pandemic had positively affected safety and 2.6% participants were unsure. This implies that the COVID-19 pandemic has severely affected school safety. In terms of communication infrastructure put in place for the management of the institutions in the context of COVID-19 stringency, findings revealed that 68.8% of the participants were of the opinion that the pandemic had positively affected the institution. On the other hand, 22.1% of the participants were of the view that the pandemic has negatively affected communication infrastructure, while a further 9.1% were neutral. This implies that the pandemic has fostered the improvement of access to online technology by the rural institution. However, this improvement is not reflected in partnerships and international collaborations as 80.5% of the participants noted that the pandemic had a negative impact while 9.1% were of the view that it had a positive impact. A little more than ten per cent (10.4%) of the participants however remained neutral. This implies that COVID-19 has negatively affected international collaborations and partnerships.

Findings from the qualitative and quantitative study revealed that although communication infrastructure has significantly improved at the university, international collaboration and partnership as well as the safety of stakeholders in the institution is worrisome. Thus, Mittal (2020) posited that HEIs continue to struggle with the timely completion of the semester and conducting examinations. Similarly, planning for the next academic session while dealing with financial constraints due to reduced tuition fee payment, school safety, partially due to a potential drop in student enrolment and placements and the sudden shift to online pedagogy were among the biggest concerns emanating from the COVID-19 pandemic (Mittal, 2020).

8.2 Research, teaching and learning during COVID-19 pandemic

To elicit information on research, teaching and learning during the COVID-19 pandemic, participants were asked questions on students mobility, stimulation of alternatives to teaching, examination process, research activities and collaboration with international institutions. Research findings revealed that the higher education institution faces a wide range of challenges associated with the sudden outbreak of the COVID-19 pandemic. Regarding how the pandemic has affected research, teaching and learning, major responses include, decrease in international student mobility, sudden shifts to online learning platforms, the cancellation of student exchange programmes as well as the postponement and cancellation of examination, scientific research conferences and scientific research projects. For instance, Manager 3 stated:

> …although the university management is doing its best to ensure the continuation of teaching and learning, we have had to postpone most examinations for alternative measures. This is because, it is simply impossible for us to continue our operations as we used to before the pandemic. For our postgraduate students and academic staff, there has been a lot of cancellation of international and local conferences due to social distancing measures which has negatively affected networking amongst academics and students (Manager 3).

Similarly, lecturer 4 lamented on the issues of international conferences being cancelled. The lecturer explained that:

> In fact, I was supposed to attend a conference in France. I have been so optimistic to get out of the country and see how things are done in the international realm. This could have been a big opportunity for me to meet different academics in order to foster international research collaborations (Lecturer 2).

Another lecturer from the university also highlighted the complication that comes with the shift from contact-based assessment and teaching and learning to an online platform. The lecturer stated that:

> It is very difficult to assess students remotely. For instance, I gave students a test using the online platform, although they passed with flying colours, one will never know if it is a genuine reflection of what the student had learn or what has been copied, given that students were given ample time and opportunity to work on their test before submission. As a result, one may question the quality of online assessment…hence, the need to plan with academic dishonesty in mind (Lecturer 1).

In support of what lecturer 1 had stated, a student also reiterated the notion of online assessment by stating that:

> …I enjoy online test because I do not need to stress myself in studying beforehand. The information needed to answer the questions are already made available either online or in the module outlines given by the university. Since I got to the university two years ago, my results this semester has been the best (Student 14).

Another student stated that:

> I am afraid of what will happen when I finally get into the job market, as you may be aware, this semester has been so short and many topics has been left untouched by the lecturer. The university already has a notorious reputation in the job market and I am afraid this might worsen the situation (Student 58).

From the above findings, one can deduce that research, teaching, learning and assessment has been heavily affected by the COVID-19 pandemic. This impact has been more severe for rural universities that do not have sufficient resources to facilitate online pedagogy. As such, Sahu (2020) posit that the COVID-19 pandemic may have a serious impact on the careers of 2020 university graduates because of the major interruptions in teaching and assessment in the final part of their studies. Similarly, they may likely graduate late due to the postponement of the final examination and/or face severe challenges of the global recession caused by the COVID-19 crisis (Sahu, 2020).

Research findings on how the institution has managed to sever the negative impact of COVID-19 on research, teaching and learning, revealed that the university increased virtual mobility and collaborative online learning as well as the provision of alternatives to examination using new measures. Manager 4 stated that:

> Due to pandemic, there has been a shift from the usual contact-based conferences to online platform, which has resulted in cost cutting measures because the university no longer need to pay for international travels and accommodation for its academics. For online teaching and learning, Zoom, Microsoft Teams and Blackboard platforms has been very helpful in ensuring that teaching, learning and assessment continues without putting both staff and students at risk (Manager 4)

Research findings generally revealed that rural institutions have been hard hit by the COVID-19 pandemic as they were forced into uncharted territory where they were forced to experiment with online pedagogy on the go. However, university management managed to put some measures in place to ensure the smooth running of the institution so that the academic year is not compromised. This finding corroborates the views of Rashid and Yadav (2020) who stated that many universities have adopted distance learning as a means of pacifying for loss of time in school. Thus, the development of e-content and assessment and reporting that is not properly planned and forethought were mostly used in the higher education institutions (Rashid & Yadav, 2020). It is therefore important for institutions to provide educators with professional autonomy and trusted with their judgement as well as ensure clear and compassionate communication with all the stakeholders of the higher education (Rashid & Yadav, 2020).

Data from the quantitative study in Figure 2 below depicts stakeholders' feedback on the state of research, teaching and learning during the COVID-19 pandemic.

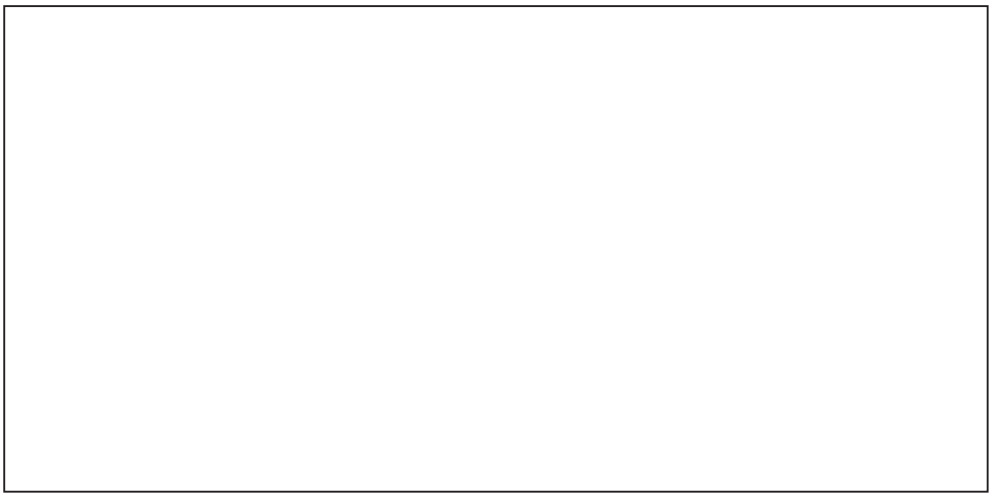

Figure 2: Research, teaching and learning during COVID-19

Research findings indicated that 93.5% of the participants were of the view that the pandemic negatively impacted student mobility while 6.5% thought it had a positive impact. This implies that student mobility has significantly been affected in the rural institution during the pandemic. Regarding stimulation of alternatives to teaching and learning, 88.3% of the participants were of the view that the pandemic had a positive impact, while 5.2% thought that it had a negative impact and 6.5% were neutral. From the statistics, one can infer that the pandemic stimulated rural institutions to produce alternative methods of teaching and learning. Furthermore, in relation to examinations processes and research during the pandemic, findings revealed that 98.7% and 52.7% of the participants were of the view that the pandemic negatively affected their institution respectively, while 1.3% and 39% thought it had a positive impact. As such, it can be concluded that the pandemic negatively affected examination processes and research matters in rural institutions. Similarly, the negative impact of the pandemic is visible in the institutions' collaborations with other international institutions as 45.5% of the participants were of the view that the pandemic had negatively impacted them, while 39% believed that the pandemic had a positive impact and 15% were not sure. This implies that international collaborations in rural universities have been negatively affected in the wake of the COVID-19 pandemic stringencies.

Findings from the quantitative and qualitative study revealed that although the institution had put some measures in place to ensure that the university is efficiently managed in the context of the COVID-19 pandemic, stakeholders' experiences revealed that the institution faced insurmountable challenges that range from limited student mobility, cancellation and postponement of examinations as well as weakened research and international collaborations. This corroborates the views of Rashid and Yadav (2020) who argue that the pandemic has uncovered the deep-seated weaknesses and deficiencies of the present education systems and has also emphasised the need for digital literacy development, particularly in times like these, for developed and developing countries. Similarly, Nganga, Waruru and Nakweya (2020) stated that rural universities face the twin-challenge of rolling out online learning for

thousands of students and finding money to pay salaries and meet their financial obligations at a time when major revenue flows are closed.

Therefore, this present condition challenges the deep-rooted notions about the role of higher education institutions in mode of delivery, providing quality education, the importance of lifelong learning, accessibility and teachers' views about the type of learners (Rashid & Yadav, 2020). An interrogation of the Systems Theory reveals that the inputs invested into an organisation are essential for success – these include the capital and human resources that are essential to run an organisation and that have to be carefully planned, organised, motivated and controlled if goals are to be realised (Von Bertalanffy, 1962; Von Foerster, 1981). For universities to circumvent the challenges that threaten their operationality, it is therefore essential for universities to acknowledge the interrelations of different stakeholder subsystems that are operational at universities as opposed to viewing them as isolated individual components in the pursuit of the education agenda.

9. CONCLUSION AND RECOMMENDATION

As schools enter into the COVID-19 recovery phase, it is vital to reflect on the role of educational systems, and particularly rural higher education institutions in managing education enterprise and fostering resilient societies. Although, South African higher education institutions have taken significant steps to curb the spread of COVID-19 after reopening, there is a need for institutions and the government to invest more in safety infrastructural facilities that will ensure that rural university stakeholders are safe and technical infrastructural facilities that enable the shift from a conventional teaching and learning approach to a more blended educational model. This is because the shift to online modes of conducting university operations has significantly resulted in pressure to adjust to the "new normal". As a result, institutions need to significantly invest in mental health support for stakeholders. Similarly, assessment and examination approaches should be reviewed in order to comply with online teaching and learning pedagogy. Furthermore, university stakeholders should be capacitated for online teaching and learning pedagogy through the organisation of various capacity building programmes that are capable of assisting them to handle challenges faced with the use of online pedagogy.

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