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# Business Repositioning at Botswana Open University in the Face of COVID-19

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and Freeson Kaniwa

## Abstract

The COVID-19 Contagion, since it became a pandemic, has left deleterious footprints on different parts of the globe. In Botswana, as the government and institutions grapple with ways to adapt and be resilient to the effects of the scourge, some positive and significant achievements have been realised. The Botswana Open University, even before this was declared a pandemic by WHO in March 2020, proactively put in place a task team to, among other calls, advise management on ways to effectively deal with the effects of the pandemic and ensure smooth business continuity. This chapter discusses the coordinated response mix that the BOU Management takes in order to fight the COVID-19 pandemic. The response has passed through a spectrum from the creation of a dedicated Task Team to be part of the response strategy, controlled working from home, to making enhanced online application of ICT and other Technology Enabled Teaching and Learning. The work also presents the continuous adaptations that the University makes, to provide it with the resilience that is necessary for its business continuity. At the end, the project briefly highlights how the educational landscape in Botswana changes with the prevalence of COVID-19 and opportunities that emanate from that for Botswana Open University.

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## Business Repositioning at Botswana Open University

Since its creation in 2017, Botswana Open University's (BOU) *modus operandi* has been to operate mainly through remote means using technology and digitalization, despite the challenges of ensuring students have equal access to both internet connectivity and electronic devices. Such an approach makes it the only online and distance learning (ODL) institution in Botswana, and one of the few in Africa, enabling it to be ahead of the challenges posed by COVID-19. The university has five dispersed regional campuses across Botswana and an administrative headquarters in Gaborone, the capital city of the country. Each campus strategically serves one of Botswana's ten districts; yet academics of BOU's four schools are based in Gaborone.

Thus, BOU's structure causes significant challenges to its business continuity when movement and physical interactions have been impeded due to COVID-19. In this article, we reflect on the information and communication technologies (ICTs) and technology enhanced teaching and learning tools such as Blackboard, Moodle, Podcasts, Video games, Google classroom, and Quizlet, which BOU has used to reposition itself, adapt and create business resilience, and adequately respond to the COVID-19 pandemic.

### Creation of an Institutional COVID-19 Task Team

Given the ravaging nature of the COVID-19 pandemic, BOU's executive management established a six-person task team in early March 2020. The team's mandate was to advise BOU's management about how the university should respond to the pandemic, inform and educate the BOU community about the virus, and disseminate salient information to staff and students as and when necessary. These actions were

intended to ensure BOU spaces remained free of COVID-19 to ensure on-site work continued unperturbed. Therefore, high risk areas at all the BOU regional campuses and HQ were identified, together with the requisite actions to be taken, to ensure prevention and containment of the spread of the virus (see Table 1). The task team was strongly supported by management and a dedicated budget line, following submission of a budget, was created for financing the team's activities.

### Development and Use of Information and Communication Technologies

The Botswana Open University, through the Department of Computing and Information Systems (CIS), developed two ICT-based systems to support teaching, learning, and researching processes at that university that were being negatively affected by COVID-19 to ensure BOU's business continuity. As will be explained below, these were systems to support the research ethics approval process and a registration system to support the entry process to campus during COVID-19. Both tools are cost effective solutions that were developed using the following, robust open source tools (Yu and Yi 2010): the Hypertext Pre-Processor (PHP) for server-side scripting; JSP for user interface; and MySQL for database server. The development was done using the prototyping software model to improve user acceptance as well as completion time (Ali 2017).

### BOU Online Ethics Management System

The first process that was affected by COVID-19 was that of submitting ethics applications for research to obtain university ethics approval. Given that most academics

**Table 1. Strategy Matrix of Risk Areas and Requisite Actions**

Risk Areas/Persons	Actions To Be Taken
Restrooms/Bathrooms	To be cleaned more often and updated rosters displayed
Receptions (HQ and Regional Campuses)	Regular sanitizing to be done; distancing; booth modifications
Entrances	Posters and notices to be displayed, sanitizing to be done
Tutorials, inductions, examinations sessions	To be suspended and later go online
Shared offices	Sanitizers to be distributed and working from home recommended
Receiving assignments	To go online
Cafeteria	To brief staff; fumigation to be done; to advise to close
Surfaces around campuses	To be sprayed regularly
BOU application/registration points	Processes to be reconfigured with hand washing, sanitizing, social distancing
People handling mail	To use sanitizers and masks
Official vehicles	To be sanitized with very reduced use (travels almost brought to a halt)
Library Service Centre	Sanitizers to be used; to recommend closure
Loading bays	Regular sanitizer use by workers; to spray

and employees, as well as students, were working from home, a challenge was posed as to how ethics applications would arrive at BOU's HQ to move through the approval process. The BOU Online Ethics Management System was developed to address this challenge. It is a web-based solution used for application and processing of research ethics clearance by all researchers, i.e., students, staff, and the public. The system allows researchers seeking ethical clearance from BOU to apply, have their application processed and

evaluated by the University Research Ethics Committee (UREC), and be issued ethical clearance certificates before embarking on their data collection research activities. All these processes are done online without the need for an applicant to physically visit any of the BOU campuses.

Instructional videos demonstrating how to use the system were developed and made available on BOU YouTube Channel for the end users (students, staff, and the public) as self-service applications. Figure 1 below summarizes the stages of

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various data objects from the initial stage of application up to the certificate issuance, together with various personnel involved in the research review process. Digitizing this process ensured business continuity at BOU during the national lockdown and physical limitations recommended by the Government of Botswana's COVID-19 Task Force.

### BOU QR-Based COVID-19 Registration System

The second process that needed to be addressed to ensure business continuity at BOU during the COVID-19 pandemic was responding to the Botswana government's directive of maintaining a COVID-19 visitor register. The register would record person information of each person entering the campus and their temperature reading for each of BOU's regional campuses and its HQ. This created long queues and risk of coronavirus transmission at entrance points, given the high volume of traffic the University usually experiences. In addition, this posed a challenge of maintaining the visitor's register, especially in cases where contact tracing is needed, when a case for COVID-19 is identified.

The BOU QR-based COVID-19 Registration System (BQCRS) is a web-based solution, allowing anyone (visitors,

students, employees) visiting any of BOU's campuses to register their personal details online, prior to arrival. Registration is done once, and a Quick Response (QR) code is generated for access to all BOU campuses and can be used at any BOU site entrance. The check-in does not involve any physical contact, thereby reducing the chances of virus transmission. The QR code is scanned at the BOU point of entry and allows a visitor's temperature to be read and recorded before being allowed into the premises. The QR code technique is a tried and tested solution used to extract a piece of information from a transitory media to be stored in a mobile device such as a phone or tablet (Tiwari 2016). Figure 2 illustrates the QR-based Registration System process from the initial step of visitor registration until the temperature reading of the visitor is captured.

A database-based system typically provides advantages over file-based systems (Królikowski and Morzy 2003). And the BQCRS provides several benefits for BOU, because a cumbersome manual search for visitor names from a paper-based list at check-in points is not needed. The system also helps the queue move faster, particularly during high volume periods. Automated check-ins also reduce error possibility, and the system automatically flags any temperature above 37.4°C, which,

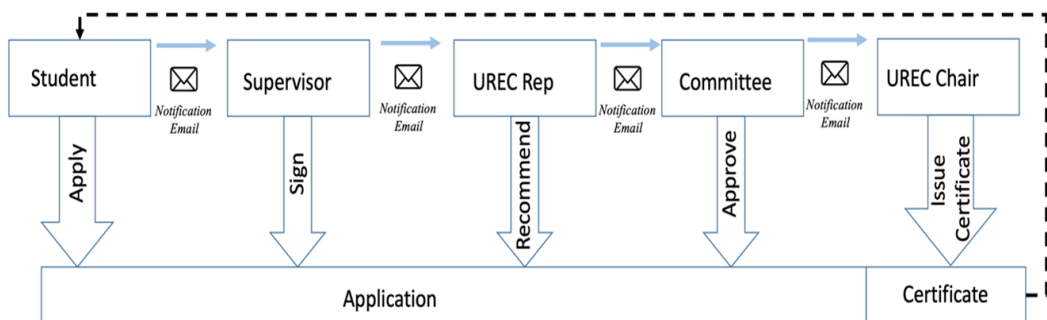


Figure 1. System Flow Model for Ethics Management System

according to Botswana's Ministry of Health and Wellness COVID-19 guidelines, need to be flagged. Finally, the system can generate reports of interests, including the red-list for those with temperatures above 37.4<sup>o</sup> C, for better decision making.

### Other Technology-Aided Teaching and Learning and BOU Processes

Today, in order to make learning relevant and dynamic, it is imperative that teaching and learning strategies embrace ICT and align with good practices of pedagogy and subject knowledge, all in an integrated manner. This is in line with Botswana national policy documents like the National Vision 2036, which commits to leveraging economic growth (including learning) on ICT, and Priority 10 of the Education and Training Sector Strategic Plan, which encourages and promotes integration of ICTs in teaching and learning. These moves have no more urgent call than when the usual face-to-

face teaching and in-presence work in usually crowded work environments is not tenable. Salient adaptive steps taken by BOU to ensure its business continuity are presented below.

The CIS Department also designed a mobile app model with offline support to provide access to the sizeable proportion of Botswana's population, which suffers poor services in remote regions, such as an unstable power supply and internet connectivity. The mobile app enables offline support for the BOU Student Management System, servicing remote students and is aligned with BOU's drive to reach marginalized regions in Botswana with quality education.

As the only exclusively ODL institution in Botswana, operating at both basic education as well as higher education levels, BOU instituted a work-from-home policy to enable its full-time staff members to continue work from home in a well-managed and productive way, with regular reporting

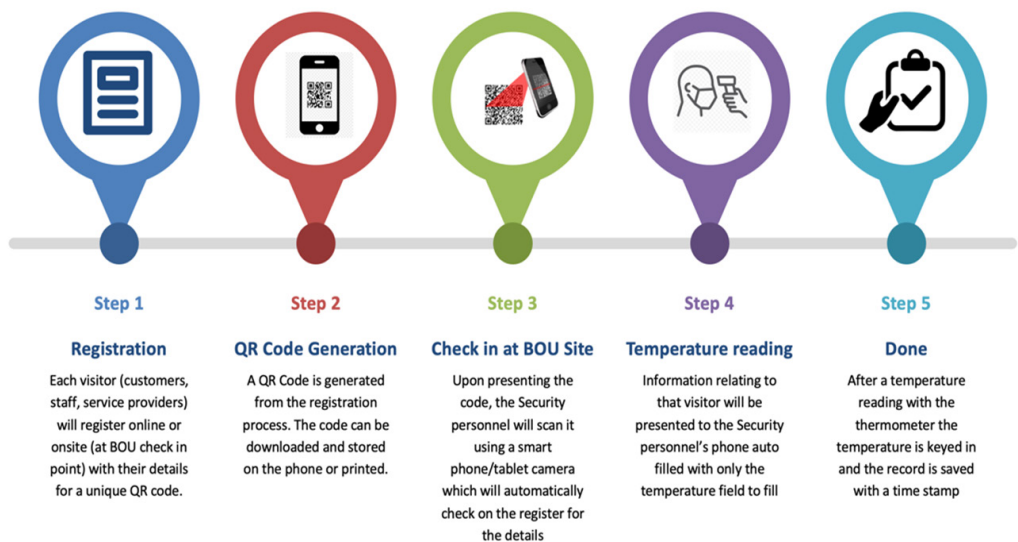


Figure 2. Process Flow Model for Covid-19 Registration System (QR-based)



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mechanisms, to ensure productivity (BOU 2020a). This occurred during the mandatory lockdown of the country in April 2020, which forced all normal face-to-face teaching and learning interaction activities to be discontinued. The work-from-home policy required the use technology at its foundation and the policy came into effect in March 2020. The policy spells out the procedure by which a full-time employee will be required to work from home, the support (especially technology) provided by the university to ensure productivity, the obligations of employees with respect to reporting and communication, and their rights when working from home.

### Adoption of ODL Technology at BOU

The BOU Strategic Plan and the Strategy for Technology Enhanced Teaching, Learning Assessment and Student Support (STELTASS) outlines the approach adopted by the university to harness and leverage technology in its management practices and in teaching and learning (BOU 2019a, 2019b). This approach is in line with the rapid technological developments that higher educational institutions are making worldwide. The recent outbreak of the COVID-19 pandemic has propelled BOU to put the implementation of STELTASS on a fast track. Some of the major STELTASS initiatives embarked upon, especially as a way of mitigating current and future pandemic situations, based on the COVID-19 pandemic experience, are as follows:

1. Changing the tutor model to a digital learning environment is intended to replace face-to-face tutorials and venue-based examinations that were common prior to COVID-19. The implementation of this model is mainly the responsibility of the

Divisions of Academic Services and Student Services, with support from the Division of Corporate Services. The model outlines responsibilities of the various organs of BOU that are involved in facilitating online tutoring using Moodle's interactive capabilities for e-tutorials, online formative and summative assessment, and the use of learning analytics (BOU, 2020b).

2. Implementing e-technology-mediated programs has been accelerated for all programs, with venue-based tutorials replaced by virtual delivery through video conference facilities, such as Google-Meet and Microsoft Teams with professionally prerecorded tutorials uploaded in Moodle, the university's learning management system.
3. Implementing online assessments was undertaken starting in the second semester of academic year 2019–2020. All assignments and examinations were conducted online using varying strategies such as timed online assessments in which students downloaded assessment items, worked off-line, and then uploaded their work after completion within the stipulated timeframe.
4. Capacity building of academic staff to develop quality online formative and summative assessments was supported through an engagement with the South African Institute of Distance Education. BOU established an Open Educational Resource course on the development of quality online assessment and conducted a virtual workshop to train academic staff in February 2021. These have greatly enhanced the repositioning of BOU vis-à-vis its business continuity during

the COVID-19 pandemic.

5. Training tutors in online tutoring. Training tutors in online tutoring through various conferencing and communication tools in Moodle as well as the OER course on quality online assessment has been prioritized and intensified by the Centre for Instructional Technology at BOU.
6. Submitting online assignments. Student assignments are now created, submitted, marked, and published on their respective profiles online via Moodle.
7. Production of audio-video materials such as orientation videos, which introduced the students to their programs, departmental tutorials, and virtual tutoring through Google-Meet were prerecorded prior to the start of the 2020–2021 academic year.
8. Holding virtual meetings became necessary due to the work-from-home policy and during 2020, BOU began to extensively enhance the conferencing equipment that had previously been installed in the various campuses across the country. The video conferencing equipment became useful for sizeable group meetings across campuses within COVID-19 dictates. In addition, most committee meetings were held virtually, with participants working from offices or their homes. Such a change has been one of the positive outcomes of COVID-19, where the drive for technology use has been placed at the forefront and is slowly becoming the norm at BOU. In November 2020, BOU also held a state-of-the-art virtual graduation ceremony.

## Community Engagement Initiatives

In addition to these internal changes, BOU has also engaged within the broader Botswana community in technology enhanced teaching. BOU facilitated the development of a short course on ICT Integration in partnership with the Ministry of Basic Education. The course will train all teachers in Botswana about how to implement technology enhanced teaching in their practice. Furthermore, BOU's School of Science and Technology and the School of Education are working on a joint Postgraduate Diploma program in Technology Enhanced Teaching and Learning. This program will target primary and secondary school teachers in the country, supporting the use of technology in their teaching practice at various levels.

BOU also provided open schooling online programs and some e-resources from the Commonwealth of Learning to the general public in Botswana through both its website and eLearning platform. This was facilitated through MASCOM, one of Botswana's largest mobile companies, to ensure that the general public could have free access (i.e., zero-rated access) to its e-Resources. BOU has since received an influx of requests for assistance from other institutions, organizations, and government departments to support them with issues related to hosting online content, training their teachers, developing e-content and online examinations, and providing community assistance.

## Lessons Learned and Opportunities

COVID-19 posed a mammoth challenge for seamless operations at the Botswana Open University. The University had to adapt to the shock the pandemic brought



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in various ways, despite being a primarily online institution, and create resilience for its business continuity. In the following section, we reflect on some challenges that persist as well as some of the lessons BOU has learned from this experience. In terms of lessons learned, one of the most apparent is that for the academic enterprise of the future, ODL will remain the leader with regard to teaching and learning, meaning that a pure online or blended mode of delivery will most likely outweigh conventional face-to-face learning going forward. Again, because all are struggling to embrace online learning, the pedagogical elements of ODL, such as interactivity and learner support, have not necessarily been well-addressed. To go online and offer quality education, such aspects must be addressed.

In addition, we have also learned that online methods of learning can actually reduce cost during these times of ever dwindling resources. One example of this cost-savings is BOU's recent online graduation, which resulted in a hefty reduction of the usual associated costs. Another opportunity here is that ODL will provide open education for the masses, which can result in their empowerment through education. COVID-19 has unfortunately also pointed out serious issues of equity in Botswana, as many citizens in the country have struggled to gain access to the basic tools needed to participate in ODL (e.g., a reliable internet connection, a digital device like a laptop) This issue is further exacerbated by Botswana's uneven population distribution in which much of the population resides in rural and remote areas.

### Conclusion

The COVID-19 pandemic has posed numerous challenges to business processes, where workplaces have had to reinvent

themselves in order to stay relevant. This has been particularly the case with universities, where the embracing of online teaching and learning have been precipitated, usually without enough know-how in ODL. The Botswana Open University has had to take steps for repositioning to ensure a smooth running of all its processes, thus managing the risks and challenges adequately. This has actually come as an opportunity for BOU, because its priority, long before the advent of COVID-19, had been ODL. Indeed, BOU's level of success during these uncertain times has been admirable, given that the advent of the pandemic coincided with BOU's strength as an ODL tertiary institution. Numerous lessons have been learned, calling for, among other necessities, the need for active collaboration and the financing of infrastructure.

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### Author Biographies

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**Lekopanye Lacic Tladi** is a senior lecturer of educational technology. His areas of interest are technology enhanced learning, blended learning, e-learning/

online learning, open educational resources, online teaching, and learning and student support. He has presented papers at conferences and published articles in journals; conducted a COL OER sensitisation and advocacy consultancy for the Ministry of Education in 2016 and developed a draft regional OER policy available on the COL Oasis repository; chaired a team of professional colleagues assigned the task of developing an online teaching, assessment and student support strategy; is a member of the BOU 2019–2036 Long-term Strategic Framework Development Committee; and is chairperson for the Learning Programmes Accreditation Committee, which oversees the process of accreditation of programmes.

**Freeson Kaniwa** is a lecturer of computing and information systems. His areas of interest are data structures and algorithms and bioinformatics and parallel computing. He is involved in community service projects for ICT integration in teaching and learning in the junior schools in some districts of Botswana and in the development of an ethics management system for the University Research Ethics Committee and Botswana Open University app.