A phase-wise approach to build resilience in the Higher Education sector: A small island state perspective

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Abstract

COVID 19 lockdown disrupted the Higher Education sector across the globe. As the apex regulator for the sector in Mauritius, the Higher Education Commission assessed the state of higher education during the lockdown period including student experience. Participants from both public and private Higher Education Institutions (HEIs), shared insights on the challenges emerging from the pandemic, measures undertaken in response thereto and the new approaches to be adopted to make higher education more resilient in future similar circumstances. A phased reform process was proposed with the aim to create a resilient higher education system capable of withstanding any future disruptions. A study conducted in October 2021 to map the phased reform process revealed that Higher Education Institutions have a contingency plan to face any renewed outbreaks, consolidated their new teaching and learning approaches and improved their student support services. The data revealed 45% of institutions had upgraded their infrastructure and logistics to be able to deliver online/blended modes of teaching and learning. This study provides a unique insight into building resilience in the Higher Education sector in small island states and the framework may be transferable to other contexts

INTRODUCTION

Higher Education is inextricably linked to our society.   The bases of this unique ecosystem have been impacted significantly across the globe by the unprecedented crisis caused by COVID-19 outbreak in 2019, creating the most severe disruption in the world's education systems in history. According to UNESCO, tertiary education is inclined to experience the highest dropout rate and a projected 3.5% decline in enrolment that will lead to 7.9 million fewer students[1].

The pandemic caught the Higher education sector unprepared, and leaders of Higher Education institutions (HEIs) had to re-invent how to run their campus operations. HEIs across the globe had to set up institution-wide task forces to mitigate the impact of the pandemic and pivoted to online learning to ensure continuity of the studies (Bao 2020; Bozkurt & Sharma, 2020; Tamrat and Teferra 2020). In the '*Great Pivot Online*' as reported by the World Bank Group, universities moved their operations online by taking five major actions: acting on the short – term by using video-conferencing and creating helpdesks and in the medium term by strengthening national and institutional capacity; mobilizing widely used and scalable resources; setting up one-stop shop for stakeholders; curating existing content and gather feedback; communicating with stakeholders.

Grappling with the new challenge of COVID -19 pandemic, HEIs have this opportunity to reimagine the traditional university learning experience. Pre-pandemic, higher education system was pummelled for lagging behind other industries in moving to a more digitally-driven business model, a widespread wave was in fact challenging the conventional model of higher education (Gallagher and Palmer, 2020). Higher Education's overdue digital transformation has now been catalyzed by COVID-19 induced disruption albeit it was uncharted territory for majority of them.

CONTEXT

After unparalleled growth in higher education in the last few decades, higher education has gone through the worst shock with the COVID-19 pandemic. According to the World Bank Report (2021), universities and other tertiary education institutions were shut in 174 countries and communities as at April 2020. Over 220 million post-secondary students representing 13% of the total number of students affected globally had their studies interrupted or ended due to the pandemic. At regional level, in Sub-Saharan Africa, the state of disruption was 98%, 8,399,127 tertiary education students out of 8,533,188 total tertiary education students were out of tertiary education. From the UNESCO projected data, it is reiterated that tertiary education will be most affected with a 3.5% decline in enrolment and 7.9 million students at risk.

Table 1: Number of students at risk of not returning to education institutions: projection results (180 countries and territories)

Education level	Female		Male		Total	
	# at-risk students ('000)	% increase of at-risk students	# at-risk students ('000)	% increase of at-risk students	# at-risk students ('000)	% increase of at-risk students
Pre-primary	2,440	2.84%	2,573	2.75%	5,013	2.79%
Primary	976	0.27%	1,074	0.28%	2,050	0.27%
Lower secondary	2,106	1.30%	2,326	1.32%	4,431	1.31%
Upper secondary	2,114	1.73%	2,306	1.71%	4,420	1.72%
Tertiary	3,626	3.06%	4,242	3.91%	7,868	3.47%
Total	**11,261**	**1.32%**	**12,521**	**1.39%**	**23,782**	**1.36%**

Source: UNESCO COVID 19 response report, July 2020

Mauritius, an insular state in the Sub-Saharan region, tertiary education is under the purview of the Ministry of Education Tertiary Education Science and Technology (MoETEST) and it has a specific directorate '*Tertiary Education and scientific Research*' for the sector. The Higher Education Act 2017 (HE Act) provides the legislative framework for the higher education sector in Mauritius. Following the repeal of the Tertiary Education Commission Act in January 2020, the Higher Education Commission (HEC) became operational together with the Quality Assurance Authority (QAA). HEC being the apex regulatory body for Higher Education has as objects to *interalia*, *promote the development of higher education, academic research and training facilities through equity of access, high-quality learning and research outcomes, the efficient use of national resources and innovation.*

Out of the ten public higher education institutions, four of them have university status, namely the University of Mauritius (UoM), University of Technology Mauritius (UTM), and Open University of Mauritius (OUM), and Université des Mascareignes (UDM). Some 40 private institutions also operate in Mauritius. The HE sector comprises of wide panoply of programmes. Some 700 programmes, ranging from Certificate to PhD, are available locally which cater to the need of different categories of learners. The public institutions provide some 455 programmes and private/distance education providers 300 Programmes[2]. These programmes encompass a wide diversity of fields and are delivered either on a full-time, part-time or flexible distance learning mode basis. The Higher Education Institutions show significant variation in their academic programs, student numbers and infrastructural and physical facilities, and type of degree awarding powers.

The island went through a national lockdown in March 2020 and successfully stamped off the virus for about eight months. The corona-virus-free period was short-lived, and the island went through a second wave culminating in another lockdown in March 2021. Like anywhere else across the globe, the pandemic had a profound effect on the Higher Education System. To curtail the effect of the pandemic, Higher Education institutions had recourse to emergency remote learning. A recent study "*Ensuring quality in online teaching and delivery in higher education institutions in Mauritius in line with SDG4*" showed that surveyed institutions in Mauritius showed a general lack of readiness, lack of access to technologies, connectivity problems, and the lack of infrastructure for the delivery and learning in an online setup. The study also revealed that there was an interest in ODL and QA of ODL and its opportunities to improve Higher Education in Mauritius. Most institutions that were surveyed have plans to expand their ODL within their institution. A baseline study on ODL policy status reveals that although a distance education policy framework was developed in 2013 in Mauritius, it has not emerged as an ODL policy framework[3].

HEIs went through an immediate response stage and more than two years have lapsed now and it was time to take stock of the factors that can assist higher education institutions to become resilient in the new normal. The objective of this study was to examine the measures adopted by public and private Higher Education Institutions in Mauritius and to make recommendations on building resilience amongst the public and private institutions.

Methodology

The Higher Education Commission conducted studies in two phases: Phase 1 – focus group workshop and surveys after the first lockdown and during the second lockdown and Phase 2 one year after the two lockdowns. The objective of this study was to assess the effects of the pandemic on the higher education sector and to come up with proposals to build resilience amongst public and private institutions in the *new normal*

Phase 1
   1.   *Focus group Workshop*
The aim of this study was to capture the experience of Higher Education Institutions in Mauritius after the first lockdown period. The Commission carried out two activities, namely a workshop and an online survey to collect quantitative and qualitative data respectively on the experience during and post-pandemic.

A set of questions, as given below, was circulated to stakeholders for productive reflections, discussions and deliberations prior to the workshop:

> - What lessons can we learn from the COVID-19 pandemic that can assist us in building a better and more sustainable future for higher education in Mauritius?
> - COVID-19 provides us with the opportunity to rethink our approach to higher education. How would you like HEC to accompany your institution on this journey?
> - One of the measures taken by Higher Education Institutions to curtail the effect of COVID 19 was opting for online learning, what can be done to improve this mode of delivery?
> - How do you see the Higher Education sector evolve in line with the 'new normal' brought by the Global pandemic in terms of Regulatory matters?
> - How do you see the Higher Education sector evolve in line with the 'new normal' brought by the Global pandemic in terms of Internationalisation of higher education?

A total of 46 HEIs were convened for the brainstorming session and five breakout groups were constituted and each comprising 8 participants from both public and private HEIs, along with other key stakeholders. The participants were grouped in such a way so as to ensure that the representativeness of the HE sector in terms of size of the student population, programmes and private/public profiles. A chairperson was designated for each group to direct the debate and to ensure that all participants given a fair chance to express their views relevant to the questions.
Each cluster focused on three questions and presented the outcome of the discussions to the audience.

   2.   *Online surveys (February 2021 and April 2021)*
In order to complement the qualitative data received during the disruption caused by the COVID-19 pandemic on higher education in Mauritius, two online surveys were conducted, one after the first lockdown and one during the second lockdown, inviting institution to report on a number of key areas deemed to be impacted by the COVID crisis. The questionnaire, adapted from the IAU Global Survey report, 2020, was implemented from 03 February 2021 and in April 2021 respectively.
A total of 21 questions encompassing the following main areas were analysed:
   - Teaching and Learning;
   - Mobility of students;
   - Assessment;
   - Enrolment of new students;
   - Partnership with the awarding body.

While most of the questions, have pre-conceived responses, provision was made for HEIs to provide more detailed and in-depth information online teaching and support to students, alternatives options to physical student mobility in respect of international students, assessment strategies in the '*New normal*' and emerging opportunities and innovations post COVID-19. The answers were collected by google forms.

Phase 2
Return to Campus online survey (October 2021)

The Commission carried out an online survey with both public and private higher education institutions to gauge information on the resumption of studies for the Academic Year 2021/2022. Post one year into the Covid-19 pandemic, the survey sought to gain insights on the strategies adopted by HEIs in response to the ongoing disruptions and ensure continuity of their activities and the level of resilience. The study aimed to map out whether HEIs are resilient

It may be noted that the survey was undertaken between 26 October 2021 and 10 November 2021, that is, prior to the Government's decision to shift all teaching activities in the education sector online until further notice.

An online survey questionnaire was administered to 50 higher education institutions operating under the purview of the HEC, that is, 10 public and 40 private HEIs. The survey, comprising a total of 31 questions, multiple-choice as well as open-ended questions, were structured on the following main sections:
- New enrolment for the Academic Year 2021/2022;
- Teaching and learning;
- Infrastructure/Logistics to support blended learning
- Sanitary measures in HEIs.
- Assessment methods;
- Support services to students

Key findings

Results - Phase 1
In the wake of COVID- 19, HEIs in Mauritius transitioned rapidly from face-to-face to online modes of instruction. The non-readiness of institutions to offer a holistic online learning experience was also noted, with the sector not fully equipped or trained for this unique experience. When institutions had to switch to emergency online learning in March 2020, most instructors were totally unprepared. Instructors play a vital role in realizing the goals of remote learning. Professional development of these instructors (academic staff) in digital skills, blended classroom management, curriculum delivery, artificial intelligence and other educational technology skills had become an imperative.

Additionally, the need for an emergency adaptation to providing some kind of access to courses for students brought forward practical challenges with respect to:
  o Equity of access to online education (for those with no equipment or internet access): Any remote learning project should prioritise equity interventions for students who are vulnerable to learning. Paired with equity it is important to have sustainable IT infrastructure.
  o A temporary one-time accommodation to a crisis is not the same as a long-term restructuring of the curriculum, pedagogy of online teaching including assessment, student engagement
  o Lab sessions for science and medical classes, and many laboratory activities were brought to standstill during the lockdown

Although online teaching was a forced mechanism, HEIs preferred a blended mode of teaching and there was a prediction of a move towards blended learning where students benefit from both campus-based and online learning. Quality assurance standards are not yet available for the new mode of teaching.

It was interesting to note that roughly 3 out of 4 HEIs (74.2 %) indicated that their staff was trained to adopt online approaches. From responses received, it was observed that a few HEIs were already anticipating the lockdown and both teaching and non-teaching staff were accordingly trained for the online delivery of courses.

Another effect posed by the lockdown situation is the major hurdle to the internationalisation of Higher Education, given:

- o The non- availability of internet access to all potential international learners;
- o The difficulty in physical movement through tedious immigration procedures

Nearly 2 in 3 (64.5%) HEIs received additional support from the awarding bodies or other collaborative arrangements with partner international institutions, in terms of shared resources, virtual mobility platform, etc

During the lockdown instructors had recourse to open educational resources, or those licensed for education use. Although partner institutions supported local HEIs to OER, the majority of HEIs in Mauritius do not have an institutional OER policy.

Development of a framework

Following the results from phase I, a framework was developed to build resilience in higher education institution A phased wise reform Framework in the new normal was recommended. The Framework provides for learning continuity in case of disruption and a roadmap with the underlying foundation built around leadership, quality assurance framework and an outlook on future market trends and demands.
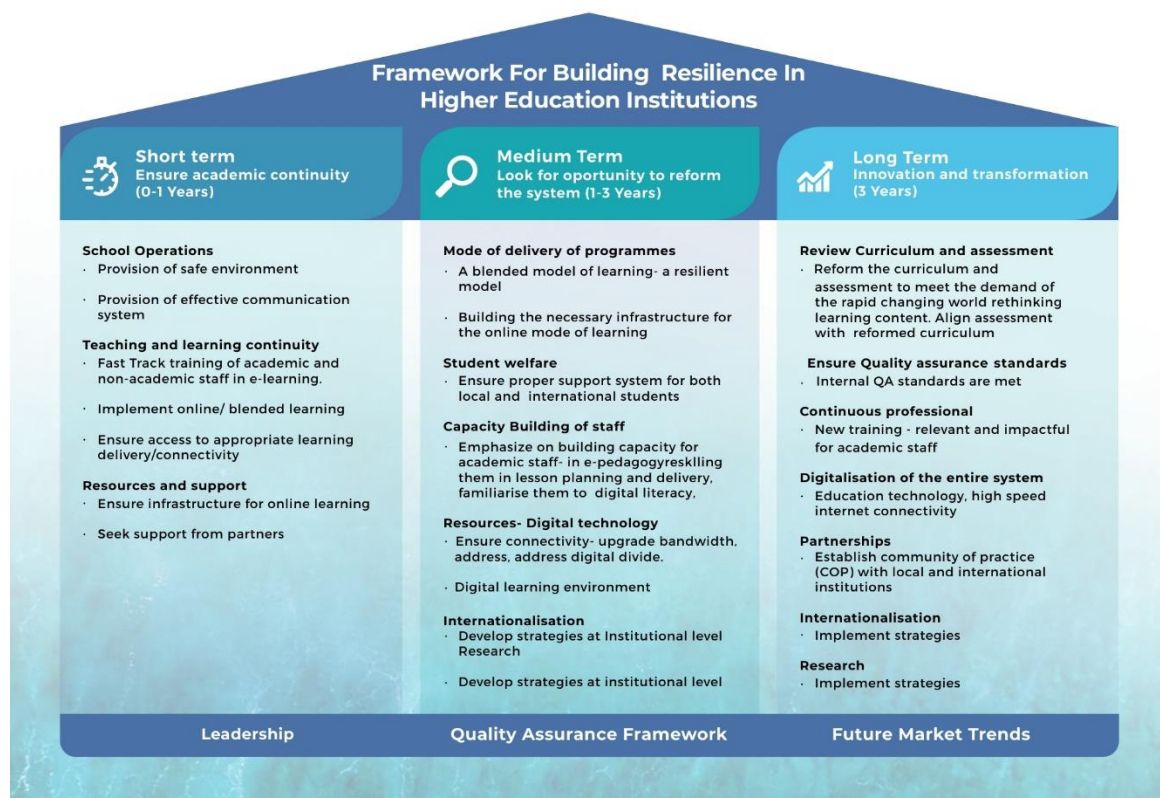
Source: HEC 2021, A Framework for Building Resilience In Higher Education Institutions

Results- Phase 2

All the respondents confirmed that they have a contingency plan for renewed outbreaks or lockdown. The activities in the contingency plan include amongst others shifting to online teaching and learning, use of digital platforms, loading of learning materials online, providing students with sufficient storage capacity to organize their work from a distance, and training of teachers to deliver online classes

54 % of respondents (17 of 31 HEIs) reported the start of their Academic Year from September to November 2021 while 10 institutions indicated they will start during the period January to March 2022. Two HEIs, on the other

hand, were found to have an open Academic Year while the remaining 2 institutions omitted the question. Three respondents indicated that they planned 2 intakes of students during the Year.

Around 50 % of respondents or 16 HEIs registered the negative impact of the Covid-19 pandemic on enrolment of local students as a low number of registrations were noted. Some 17 of 31 HEIs are experiencing difficulties in recruiting international students, such that a lower-than-expected number of admissions of international learners has been recorded.

The majority of the HEIs, 28 out of 31, are having recourse to blended learning and 3 institutions are delivering their programmes fully online. It is to be noted that this survey was conducted prior to the decision of the Ministry of Education, Tertiary Education, Science and Technology calling for the adoption of online teaching and learning modes in the institutions.

From data collected, 14 institutions (45.1 %) have upgraded their infrastructure and logistics to be able to deliver online/blended modes of teaching and learning. Such upgrades are forthcoming in the other 9 HEIs. On the other hand, 3 HEIs which specialize in distance learning did not feel the need to upgrade their teaching and learning infrastructure.

The following Improvements were introduced by HEIs in respect of their digital learning environment:
- Use of Digital platforms, such as the Moodle Platform and other learning management systems, and recording facilities
- Upgrade of Internet bandwidth
- Setting up of videoconferencing and audiovisual equipment in training rooms
- Use of social media such as zoom and TEAMS platforms for lectures and sharing of instructional manuals of such platforms
- Provision of laptops to staff
- Training of staff in a blended learning environment

21 HEIs (67.7 %) revealed that their assessment strategies have been reviewed for the new Academic Year, such that continuous assessments now comprise online submission of assignments/projects/ presentations. 9 out of these 21 respondents have migrated their end-of-year examinations online while 19 HEIs evaluate their programmes fully through the course works, at least for non-final levels. Where face-to-face examinations are mandatory, the same are carried out with due respect to sanitary protocols.

Student support services have undergone innovations in 77.4 % of the institutions. HEIs now provide online support to learners such as the use of social media, to enhance interaction and faster dissemination of information. At least 3 HEIs are providing counseling and mentoring services to ensure the well-being of their students. Other support services at the disposal of students are as follows:
- Remote troubleshooting assistance for IT related issues
- Online follow-ups with students
- E-library and LMS/ SMS platform
- Online access to study materials, etc.

The above results were mapped to the framework to check the short term actions to ensure academic continuity within one year and the results are given in the Table below.

Actions (short term within one year)	% HEIs implementing
School operations	
Provisions of safe environment	All
Provision of effective communication	All
Teaching and learning continuity	
Fast track training of academic and non-academic	72%
Implement online/blended learning	All
Ensure access to appropriate learning delivery connectivity	45%
Resources and support	
Ensure infrastructure for online learning	45% of HEIs
Seek support from partners	65% of HEIs received

Table1: to map the actions taken in the short term

Recommendations

Based on their experiences of the COVID-19 pandemic and the challenges, many institutions saw the crisis as an opportunity for innovations that will enhance their operations in the future. Some of these innovations are as listed hereunder:

(a) Transformation of the traditional face-to-face teaching to blended teaching and learning model, which will have implications in terms of capacity building of the staff, investment in infrastructure and new assessment methods, etc.
(b) Improved collaborative arrangements with overseas partners;
(c) Revisiting the education model with the adoption of alternative qualifications and greater focus on experiential learning.

In addition, to build resilience in our Higher Education Sector, it is recommended to:
- Develop national policy on blended learning including OER policy and QA policy for blended learning;
- Develop a framework for the welfare of both local and international students
- Develop policies for digitalization in the higher education sector
- Develop national internationalization strategy for the sector
- Assist to building the capacity of lecturers and learners in new ways of teaching and learning, for coping with crises, and how to use ICT effectively

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