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The Impact of COVID-19 Pandemic on Higher Education and Research: Learning from Experience and the Way Forward

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Abstract The COVID-19 pandemic took its toll on many countries in early 2020 after the first case was reported in China at the end of 2019. Malaysia was not spared either and the Government was forced to take a bold yet drastic measure in implementing the Movement Control Order (MCO) in earnest on 18 March 2020. The measure, akin to a lockdown, practically forced all forms of socio-economics and socio-educational activities to come to an abrupt stop. Schools, institutions of higher learning and training centers were directed to close its doors to students. Universiti Utara Malaysia (UUM) had to abruptly implement contingency plans in the wake of the negative impact brought about by the pandemic. Almost all academic activities had to be reorganized when majority of the students opted to return to the safety of their home environment, and the staff were required to work from home in compliant with the MCO. This development necessitated the University to introduce the remote learning mode in place of the traditional face to face learning and teaching (T&L). Various other strategies and measures were also introduced by the University which required reprioritization of tasks and determining possible risks that could impede normal daily operations. UUM opted for a holistic approach to address the impending concerns and to ensure the continuity of the education process and to address the wellbeing of its staff who are forced to work from home.

Keyword:

Campus sustainability, COVID-19, education, research

1. Introduction

Malaysians in general will remember the month of March 2020 as one when the world stops due to the COVID-19 pandemic. The virus spreads unabated across all continents and countries, forcing the governments to impose drastic measures to curtail the pandemic. The Malaysian government reacted swiftly by implementing the Movement Control Order (MCO) as an urgent measure to contain the virus. The people were not allowed to venture outside their homes without valid reasons with roadblocks manned by security personnel to check on unauthorized movements. Schools, offices and non-essential businesses were ordered closed, all events cancelled, and significantly, all land and maritime boarders were also closed. [2]. During the lockdown, basic necessities such as food and medical aids were provided for those in need by many non-governmental organizations (NGOs) as well as private organizations. The Ministry of Health, Malaysia was at the forefront in the fight against the pandemic. Its staff formed the main frontliners and have been working effortlessly round the clock at the onset of the outbreak. In view of the major safety hazard posed by the virus, all frontliners were required to wear the Personal Protective Equipment (PPE) consisting of face shields, masks, gowns and gloves when treating possible infected cases. Compounding the severity of the situation was the lack of personal protective equipment (PPE) for use by the frontliners due to the unprecedented scale of the pandemic. In responding to the call for assistance, many government and non-governmental institutions such as universities, private enterprises and individuals have been forthcoming in assistance to produce the PPE required. All these collaborative efforts made a significant impact on the pandemic when the statistics for infected cases started to decline in the month of April 2020 [1, 3].

Covid-19 pandemic has affected all social and economic sectors in the country negatively. In the context of higher education, universities were simply caught off guard and was found wanting in their preparedness to adapt to the new normality brought about by the imposition of the MCO. In compliant with the restriction order, all classrooms and student activities were immediately cancelled. Students hurried back to the safety of their hometown and staff were required to work from home. In mitigating and minimizing the impact from the pandemic, UUM had taken swift yet necessary actions in accordance with the standard operating procedure (SOP) and other guidelines issued by respective ministries. In this article, we would like to share our approaches and experience during this unprecedented health concern in sustaining and strengthening our education and research for future.

2. Learning from Past Experiences

At this time when the world is still seized with developments around the current outbreak of the Novel Corona virus (COVID-19), universities in Malaysia are making preparations for the gradual reopening and returning of students to campus after receiving approvals from the government. Prior to the outbreak, the teaching and learning (T&L) activities was on Face-to-Face (F2F) method while the online learning is merely used in support of the F2F activities. Notwithstanding, since early 2019, the University has embarked on a quest to digitalize all aspects of campus operations. Academicians have been urged to maximize the use of online classes and with the incorporation of elements of blended learning. Research activities have also been aligned to meet certain metrics outlined in the SDG2030 such as upgrading education (Goal 4), prudent waste management in campus (Goal 12), and afforestation for sustaining the green landscape of the campus

(Goal 11). In this respect, the University has started offering special grants to stimulate more innovations towards campus sustainability. Two such examples would be the UUM Development and Ecosystem research grant which aims at encouraging young researchers to develop sustainable development plans and ecosystem and the Student Development grant for students. In this context, the pandemic is viewed as a blessing in disguise for it highlighted some shortcomings in the present system such as the specific state of preparation and readiness of the University in reacting to the pandemic and the subsequent implementation of the MCO. Hence, several past events have been studied in order to customize the university operation to suit the dictates of the restrictions.

2.1. Technology in Education and Innovative Method in Teaching and Learning (T & L)

2.1.1. *The* technology

Historically, the use of technology either as a tool for learning or a process to improve learning is well shaped by the socioeconomic and development aspirations. Before the arrival of Islamic scholars to *Tanah Melayu* (peninsular of Malaysia prior to independence), learning process was transferred from parents to their kids through hands-on training [4]. Later, chalk and talk are widely used when better education system was implemented by madrasah or Islamic schools. The prosperity of economy through the migration of Chinese, Arabs, and Indians as well as British colonization had allowed more technology been implemented such as flash cards, charts and models [5]. Later after Malaysia had their independence, more technology in education have been used such as education television, audio aids, slides, and radio and TV broadcasts. Then, early 1980s IT became feasible where computers have been made available in schools and higher institutions although it did not reach most students. In late 1990s, internet has been made available and has reshaped the technology used in teaching and learning activities through e-learning [6, 7].

Despite of changes in technology use in learning, physical meeting between teachers and students in traditional classroom is the most common. However, the MCO challenges our common learning practices hence alternative education practices need to be explored. The advancement of digital technology has been witnessed some platforms that are possible to be used as a virtual meeting between lecturers and students. The pandemic is affecting vulnerable societies the most and posing a serious challenge to the attainment of SDGs Goal 4 (Quality Education).

Learning technology ranges from simple system to much complex system. Simple systems often are developed as a tool for learning such as sharing document (e.g. Google docs, slides and sheets), meeting online (e.g. Zoom, Duo, Webex, FBLive, Google meet), interactive learning (e.g. Youtube), assessment tools (Kahoot, Quiz Makers, iSpring QuizMaker) and others that are specifically developed to cater certain activities in teaching and learning. Meanwhile, complex system usually is developed to cater five domains in teaching and learning namely designing, developing, managing, implementing and evaluating the learning. Despite of its great functionality in improving teaching and learning, the system is costly, require in-house technical commitment, require great maintenance and demand for great effort to sustain its functionality. The systems among others are Blackboard, Moodle, Microsoft 365, Google classroom, and Sakai.

2.1.2. The innovation method in teaching and learning

In response to the MCO, many universities have implemented remote learning. This method is among the alternative T&L methods that could prevent students from

experiencing setbacks during university closures. In order to prepare lessons throughout the COVID-19 pandemic outbreak, instructors need to equip themselves with the new ways of designing, delivering and assessing their courses. Remote learning refers to any forms of learning using the internet, but without the traditional classroom face-to-face interactions where it can be done synchronously and/or asynchronously.

Often, five principles have been used as guideline for instructors when using the remote learning method during the COVID-19 outbreak namely: (i) Student Centered Learning (SCL), (ii) Revised Course Learning Outcome (CLO), (iii) Course Load and Student Learning Times (SLT), (iv) Constructive Alignment, and (v) Learners' accessibilities background. Instructors need to consider these principles during the process of designing, delivering and assessing their teaching and learning activities. Nevertheless, the ones described in this principles will be more relevant to be applied when assessing activities via remote learning.

During the MCO, different students could face different issues pertaining to their locality with different quality of IT infrastructure, availability and stability of the internet as well as suitable IT equipment. These concerns should be foremost in the instructors' mind when preparing different types of teaching and delivery methods for different categories of students such as students with good internet connection, students with moderate internet connection and students with no internet connection.

2.2. SDG, Pandemic and Research Alignment

The cost of the pandemic in terms of loss of human lives is painful. Also, the pandemic effects on the sustainable development prospects are worrying. Instead of affecting SDGs Goal 4, the pandemic also is expecting to increase the unemployment rate to 3.9% (610.5 thousands people), pushing fresh graduates into deep dilemma for getting jobs [8]. All these are affected due to weak economic growth (SDG 8) especially during the MCO and potentially create food insecurity (SDG 2) as most industries including farming activities are shut down. While some students could leverage the advancement of technology to continuing their studies, other part of students could be left behind due to limited access to the technology or poorness. Therefore, aligning research focus to minimize the impact on SDG and pandemic threats is vital.

UUM research is built upon and align to the National Priority Areas [9], Research Cluster [9], and UUM Niche Areas (Figure 1). The UUM Niche areas consist of nine sub areas related to management and social science, which is the niche area of the establishment of the university. In order to strengthen R&D, four University CoE (UCoE) and 21 School CoE (SCoE) were created, reinforced by approximately 20% of science and technology (S&T) and 80% of non S&T researchers. Despite UUM is a management and social science based university, innovation in new services or products is still highly demanded to assist community during and after MCO.

Figure 1. National Priority Area, research clusters and UUM niche areas

3. Campus Sustainability in Pandemic Era and Way Forward

Stay calm but act fast and right is a way how UUM first react towards the MCO. The announcement of MCO was made two days prior to its restriction, demanded UUM to take action based on prioritization and urgency. We prioritized focuses, tasks and determined possible risks that could impede our functions. Then, taskforce for each education and research was set up to relook the interrupted practices and recognizes opportunity that could be leveraged.

3.1. Education and Research during the MCO

Teaching and learning is the university core business was at risk when the MCO began. Classroom is totally impossible and most students fled back to their hometown. Apparently, the MCO began at the same period where the university was in the semester break. However, several risks had been listed to response to all possibilities that could be due to the pandemic by the teaching and learning (T&L) taskforce including:

i) to consider all possibilities if the university would not be allowed to re-open due to pandemic, hence traditional classroom remain impractical,
ii) readiness among lecturers and related administrative officers to handle alternative and doable teaching and learning effectively with minimum effect on the planned academic calendar, and
iii) to get technology ready to support T&L that covers five domains namely designing, developing, managing, implementing and evaluating the learning.

The education taskforce had developed a new policy of T&L by aligning the home-based learning with support technology and revising the academic calendar by allowing T&L preparation to be done. While, all lecturers were called to adopt e-learning so that they become familiarize with available T&L technologies either provided by the university or free access from market. All these were executed in a month with continuous observation. The university has made an immediate investment and engaged ourselves with tele-communication provider to ensure all messages, news and information could be reached by all. Through our online learning platform, lecturers are able to re-design their classes,

teaching materials, meetings and assessments. At the university levels, all activities pertaining to T&L are observed, monitored and improvised continuously to minimize all possible disruption. Figure 2**Error! Reference source not found.** depicts the actions executed by UUM in order to sustain the education among students to ensure that no one is left behind.

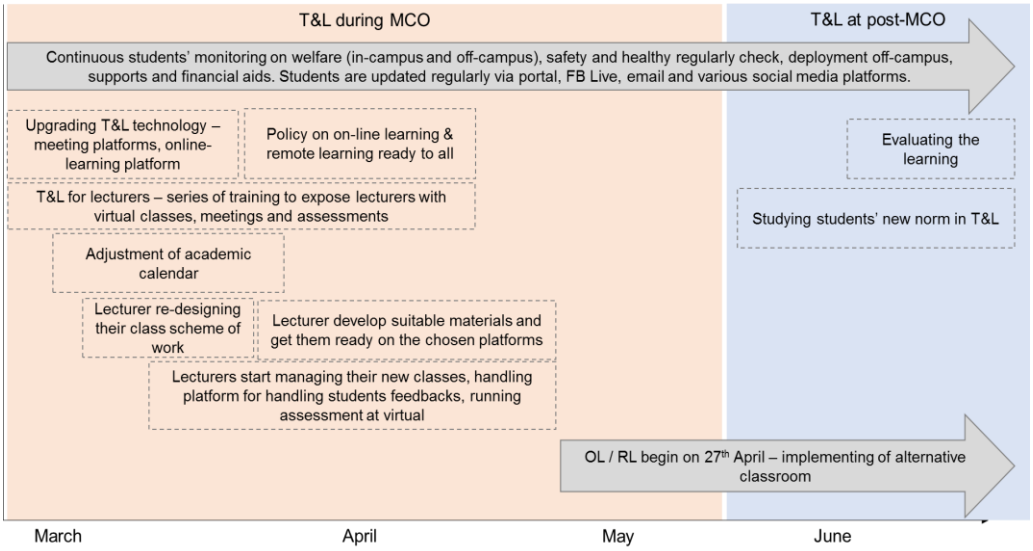

Figure 2. The activities executed in T&L during and at post-MCO

The urgent demand to respond to some urgent needs due to pandemic has affect the shift the interest in research direction. Researchers were urged to innovate new ideas to improve business and service delivery and providing impactful research outcomes especially to assist affected businesses and entrepreneurs. A quick RM100 thousand (around US$23.5 thousand) in-house research grant was offered for a short term research, all aiming to produce an impactful outcome to ease social tension due to financial insecurity, stress and uncertainty.

Figure 3. Innovation in UUM during MCO

Figure 3 illustrates the innovation lead by UUM researchers and students. Serious initiative have been taken where special internal research grant scheme for Covid-19 called ResQ-COVID-19 grant was offered. The grant proves UUM commitment to help the community and nation in confronting the COVID-19 outbreak. The grant offered was one of its kind as UUM would like to convey to the nation its commitment of assisting the government particularly in addressing the issues of unemployment and food security during the COVID-19 outbreak. The research produced by these selected researchers was not solely to meet the Key Performance Indicators (KPIs) of the fellow academics and that of the university, but rather as a contribution to the community in the form of applied research. The researchers need to make sure that the studies done are aimed at developing the community and the country. Six researchers were selected to receive the ResQ-COVID-19 grant amounting MYR110.8 thousands (US$25.8 thousands).

3.2. Education and Research Post-MCO

The learning experienced in facing the uncertainty threats during the pandemic has nurtured our university ecosystem and research direction to be ready in future. Teaching and learning is now improvising towards permanent new normal where virtual learning is a promising practices. At post-MCO, classes remain through home-based learning. The university continuously monitoring the T&L activities and evaluation on T&L are currently perform to ensure students and lecturers are accustomed with such new normal. Meanwhile, R&D in the university is expected to swiftly focus more on sustaining business in new economy framework, adopting digital economy, mitigation plan to avoid social collapse, and disruptive technology where all these areas are in line with UUM niche areas. Hence, interdisciplinary research is vital between social science and technology community and researchers need to work hand-in-hand together to innovate futuristic technologies and better policies to improve the “next normal” country’s wellbeing, quality of life and nation building. UUM has outlined post-disaster conceptual idea to improve the delivery of education and research in the context of higher education institution, aiming to bring all to work together in correcting weaknesses and moving forward for greater future.

3.3. The Way Forward

In order to improve the ecosystem in T&L and R&D for post pandemic, we highlighted few strategies such as follows:

3.3.1. Strong Leadership and Visible Direction

A long-term university strategic planning has been established to support various national and international agendas. Top management officials are urge to possess strong leadership and understanding on a bigger picture on how to move forward from strategic to operational business process. Continuous training on strategic management and leadership program are essential to upskill them. Meanwhile, both T&L and R&D are being revising to cater the needs of “new norm”.

3.3.2. Changes in the Governance: The Digital Campus Initiative

Digital infrastructure is pivotal in higher education institutions to support T&L and other administrative service delivery. A good network infrastructure is vital to provide better connectivity for stakeholders. Framework on the establishment and sustainability of digital campus including digital learning has been created to support sustainability ecosystem in

campus. UUM strives to put everybody in connected to ease communication, prosecution of action plans as well as improvising living standards. Meanwhile, specific Digital Learning Framework has been developed to assists university effectively embedded digital technologies into teaching, learning, and assessment. Besides, newly Financial Information Systems to support daily financial transaction is under development. A good digital infrastructure will enable the administrators and academic staff to be more strategize for future planning, monitoring and controlling of the business process.

3.3.3. Inculcate the Culture of Competiveness: The Faculty and Academic Staff

UUM strategic planning system has proven to be an effective tool as we are continuously improve our position at the international standings. New strategic planning which consist of many agendas such as Malaysia Research Assesment (MyRA), Setara, QS Ranking, THE, UI Green etc. are all reviewed continuously to ensure performance among academic schools and research centres are well monitored. Meanwhile, we strive to maintain education accreditation namely AACSB, AMBA, EPAS and ABEST21 to ensure good quality T&L is provided to students.

3.3.4. Improving Research Quantity and Quality

In order to rebuilt and develop the nation, university needs to increase their R&D productivity by developing more product inventions or services to overcome the impact of the pandemic and developing resilient community. Thus, UUM will capitalize on the inter-disciplinary type of research where non S&T and S&T researchers need to work hand in hand by rehumanizing and embracing new technology in demand. Collaboration with external party is the key and applied based research has to be the highlighted. With the shrinking financial resources at ministry level, university must seek other financial opportunities to fund their research activities. We must develop our research talent and engage the potential researcher to monetize their academic expertise. This will develop trust between academia-industry and will open opportunity for the university to showcase their services as a solution provider and experts in a specific domain. Impactful collaboration will lead to a more scholarly activities such as research and consultation. Researchers need to prepare their self to find R&D funding from industrial funder. They need to understand the market demand, engage the industry, self-branding and add value to their solution i.e. low cost – high impact output. In addition they also need to know the state of art on how to pitch or win projects from industry partner. At UUM, we are fortunate to be awarded as an approved R&D institution for double tax deduction under section 34B Income Tax Act 1967. According to this act, a company will enjoy double tax deduction if R&D services is procure from our university. Hence, university need to capitalize this government incentives by engaging more industrial partner and provide better solution.

3.3.5. Sustainability Resources: Financial, Infrastructure and Human Capital

It is difficult to govern a university with high expectation from stakeholders with a decreasing and tight operational budget. Investing on human capital is the way to go where university can eventually monetize the academic expertise to serve the global community. Policies and guidelines need to be revised and improved. Projects with lower budget but has the potential to produce high yield in terms of Return on Investment (ROI) or Social ROI must be prioritized.

4. Conclusion

UUM actions in education and research activities at during and post pandemic are on track to achieve desired goals of sustaining the campus despite of such unpredicted threats. The most important mission is to ensure that no one is left behind either in education and wellbeing, and to enhance the university environment and ecosystem for better livings. New normal as practices in campus acquire students and staff to remain taking care each other through social distancing, adopting home based-learning through e-learning or remote learning, adopting virtual meetings and e-document, and avoiding 3C (crowded space, confined space and close conversation). As it is expected the new normal to become permanent practices in future, UUM is crucial in the productions of more ideas and innovations through impactful research to contribute to social harmony and improvised living standards.

References

1. Athira Nortajuddin, 16 April 2020. How Malaysia is winning the war against COVID-19, The ASEAN Post at https://theaseanpost.com/article/how-malaysia-winning-war-against-covid-19, accessed on 1st June 2020.
2. Prime Minister Office, 16 March 2020. Restriction of movement order. Available at https://www.pmo.gov.my/2020/03/movement-control-order/, accessed on 20th May 2020.
3. CPRC Ministry of Health, 2020. Distribution of COVID-19 cases according to date of confirmation at http://covid-19.moh.gov.my/, accessed on 1st June 2020.
4. Nor Idayu Mahat & Mohd Sobri Don. (2018). *University-Industry Collaboration: Malaysia skills development for producing employable graduates.* In *Cooperative Education in Asia: History, Present and Future Issues.* New York: Taylor & Francis Group.
5. Yusup Hashim & Abd Latif Gapor. (2010). The evolution of instructional technology in Malaysia. *International Journal of Instructional Media*, 37(3), 229 – 237.
6. Goi, C. L. & Ng, P. Y. (2009). E-learning in Malaysia: Success factors in implementing e-learning program. *International Journal of Teaching and Learning in Higher Education*, 20(2), 237 -246.
7. Asirvatham, D., Kaur, A., & Abas, Z. W. (2005). *Country reports: Malaysia*. Paper presented at the Asia E-learning Network Conference.
8. Department of Statistics Malaysia, 8 May 2020. Key statistics of labour force in Malaysia, March 2020 at https://www.dosm.gov.my/, accessed on 16th June 2020.
9. Ministry of Higher Education, 2020. Malaysia Greater Research Network System. Available online at http://mygrants.gov.my/main.php, accessed on 17th June 2020.