Taking a leap of faith: a study of abruptly transitioning an undergraduate medical education program to distance learning due to COVID-19

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Abstract

The novel coronavirus disease pandemic has forced universities around the world to transition to distance learning immediately. This case study sheds light on the rapid transition to distance learning due to COVID-19 of an undergraduate medical program at the College of Medicine in the Mohammad Bin Rashid University of Medicine and Health Sciences. The purposeful transition to distance learning efforts is reflected upon as four interrelated aspects: supporting faculty members in delivering the content, managing curriculum changes, engaging with the students to facilitate the distance learning experiences, and conducting online assessments. Challenges included the high perceived uncertainty, need for making ad-hoc decisions, lack of experiential learning and clinical skills' testing, and blurring of work-rest boundaries. Seminal triumphs included building on a strong existing digital base, a vision for innovation, and a cohesive team that was key to agility, rapid decision-making, and implementation.

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Original Manuscript

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Abstract

The Coronavirus Disease 2019 pandemic has forced universities around the world to immediately transition to distance learning. Although there are ample of publications around the effect of COVID-19 on universities in the Middle East, none reflected upon the process through which health professions' educational programs transitioned. Accordingly, this study aims at shedding light on the rapid transition to distance learning due to COVID-19 of an undergraduate medical program at the College of Medicine in the Mohammad Bin Rashid University of Medicine and Health Sciences. Action research constituted the foundation of this joint effort leading to the investigations, reflections, and improvements of practice; it took the form of ongoing cycles of planning, acting, observing, and reflecting. The transition to distance learning efforts were grouped into four interrelated aspects: supporting faculty members in delivering the content, managing curriculum changes, engaging with the students to facilitate the distance learning experiences, and conducting online assessments. Challenges included the high perceived uncertainty, need for making ad-hoc decisions, lack of experiential learning and clinical skills testing, and blurring of work-rest boundaries. Seminal triumphs included building on a strong existing digital base, a vision for innovation, and a cohesive team that was key to agility, rapid decision-making, and implementation.

Keywords: Medical Education, Distance Learning, COVID-19 Pandemic, Change Management, Learning and Teaching, Curriculum Content and Delivery; Action Research

Introduction

The Coronavirus Disease 2019 (COVID-19) arrived in a globalized world. It disrupted all walks of human life following its initial reporting by the World Health Organization (WHO) China Country office on 31st December 2019 as "pneumonia of unknown etiology detected in Wuhan City, Hubei Province of China" [1]. The WHO initially, on 30th January 2020, announced the disease as a Public Health Emergency of International Concern (PHEIC). On 10th March 2020, an alert was sent by United Nations International Children's Emergency Fund (UNICEF) to protect students, and soon after that, on 11th March, WHO declared COVID-19 as a pandemic [2]. Countries rallied to promote the use of Personal Protective Equipment (PPE) and impose restrictions on people's movement to safeguard the health of its citizenry. Every sector of human activity was paralyzed, and the education arena was among those most severely affected. The threat to global medical education was two-fold and interrelated: continuity of quality education and the resultant impact on graduating physicians' future performance.

As circa 2020 drew to a close, reflective publications on actions taken in health professions undergraduate and postgraduate educational institutions have dominated medical education literature. Resource-rich academic environments highlighted social distancing, seclusion, and struggle with digital transformation as their biggest challenges. As for resource-poor surroundings, the lack of e-learning capacity (infrastructure, skills, learning and development), internet affordability, connectivity, and e-skills were the difficulties that surfaced the most [3, 4].

Despite these challenges, many centers were quite innovative in overcoming deficiencies and circumventing challenges. In postgraduate/residency programs, fostering a community of learning using the multiple educational tools enabled by proprietary platforms Microsoft Teams and Zoom, among others, have been hailed as the torchbearers of the digital switch. This was a significant transition from the previous random but less reliable short communications of the residents' community through social media platforms [5]. Particularly hard hit were medical students on the verge of graduation, but leading world institutions reoriented assessments towards online teaching, complemented by open-book examinations, allaying student anxiety for their future careers [6].

The most striking and impactful changes have been the *initial* rapid adaptation due to the short lead time, and mitigating educational strategies devised and implemented during the period of complete lockdown across countries and continents. This could be referred to as the *first wave* academic response to the *first wave* of viral spread. The timeframe extended from the abrupt onset of the pandemic, blending with a sustained initial period, and lasted several months.

Although there are plenty of publications around the effect of COVID-19 on universities in the Middle East region [7], none reflected upon the process through which health professions' educational programs transitioned [4, 8]. Accordingly, the purpose of this study is to trace the abrupt educational transition of a new medical school in the early years of its evolution, growing and delivering an undergraduate medical curriculum, on the eve of complete lockdown in the country. Hence, an inhouse, cross-functional team of researchers joined forces to control for the entailed process and document the experience in a scientifically-sound manner. This team was comprised of representation from the respective university's administrative workforce handling the Quality Assurance and Institutional Effectiveness portfolio, faculty members, academic leadership, and medical education experts. In alignment with the recommendations generated from a scoping analysis of the literature on COVID-19 [9], this study sheds light on a holistic multi-disciplinary approach to mitigate the impacts of this crisis, whose implications reach far beyond the biomedical risks, especially in health professions education. It defines the elements of digital-technology preparedness and of agile systems. It identifies the initial challenges and tribulations, and subsequent triumphs of transition. Finally, this study of an educational leap of faith lays the foundation for a critical analysis of pains, gains, and lessons learned that have allowed for consolidation and future

risk planning.

Methods

Context of the study

As the most globalized country in the Middle East, the United Arab Emirates (UAE) announced the first case of COVID-19 on 29th January 2020 [10]. As part of the proactive measures implemented to slow the spread of COVID-19, all educational activities in the UAE were suspended temporarily on 8th March 2020. This came just three days before the WHO declaring COVID-19 as a global pandemic. Under directives of the Minister of Education, the College of Medicine (CoM) at the Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) moved all educational activities (Teaching, Assessment, and Administration) 100% online and resumed activities in two-week's time (as of 22nd March 2020), with all employees (faculty and staff) working remotely.

The Bachelor of Medicine, Bachelor of Surgery (MBBS) program at CoM is a six-year undergraduate program following a spiral curriculum and divided into three sequential phases namely: foundational basic sciences, pre-clinical, and clerkship. Phase I takes place over the first academic year and introduces students to basic concepts in medicine, while Phase II covers academic years two and three where teaching is organized around body organ-systems and integrated with clinical medicine. Years 4 to 6 constitute Phase III: during the first two years of this phase, students undergo their clinical placements/rotations, with the final academic year taking the form of an internship.

Before the onset of COVID-19, the curricular delivery used to take place on-site, face-to-face, supplemented (where appropriate) with asynchronous assignments and activities on digital platforms. The institution was invested in several digital platforms. The first one is the Desire-to-learn (D2L), which is a Learning Management System that constitutes the repository of course files, and was also actively used for forums and quizzes across all phases. A virtual microscopy-enabled website (PathXl) was actively employed for practical pathology teaching and skills-testing for phase 2. As for the Aquifer web-platform, it provided an opportunity to supplement clinical-focused problem solving by Phase III students. Clinical teaching activities included simulated learning on mannikins followed by direct patient contact in hospitals and clinics. Assessment of cognitive learning entailed physical presence at the examination center albeit conducted entirely online on examination software. Objective Structured Practical Examinations (OSPE) in pre-clinical courses were conducted on the laboratory bench, and through a virtual microscopy online teaching and learning platform. Clinical skills were assessed in multiple formats including Case-based Discussion (CBD), clinical evaluation exercise (miniCEX), and Objective Structured Clinical Examination (OSCE).

Educational activities' suspension came eight weeks into the 15-week second semester for students in preclinical years 1-3, almost at the end of mid-semester in-course assessments. During this time, year four students were midway through the 4th of a total of 5 clinical rotations for the academic year. In the respective academic year, the enrolment numbers were as follows: 65 students in Year 1, 60 students in Year 2, 38 students in Year 3, and 47 students in Year 4. In terms of instructors, a total of 25 clinical and non-clinical academics faculty members were teaching in Basic Sciences, and 11 were teaching in Clinical Sciences (2 of whom were part-timers). The faculty members were also coordinating and overseeing the clinical onsite rotations, while a small number of adjunct clinical faculty, across all disciplines, were also engaged to varying degrees in the hospital setting.

The transition was characterized by a short, intense, latent period of about a fortnight of reorganizing, regrouping, and reinforcing governance and the educational process and its delivery [11-14]. The university's learning and teaching, research, and community engagement, through action research strategies, was structured to effectively meet the challenges of delivering its educational mission. This was achieved through problem selection, analysis, action design, implementation, and evaluation by collaborative cross-disciplinary teams of stakeholders [15].

Action research, in this context, enabled concrete and practical problem-solving and deeper reflection processes through stakeholders' participation in research-based discourses [16-18]. Systems were quickly in full swing towards enabling infrastructure and digital skills, which improved incrementally, as experience and troubleshooting became an integral part of the change. Thus, early intervention primed by a digitally-enabled new medical school pivoted the educational enterprise in the right direction. Throughout the period, leading into the conclusion of the academic year, the transition was regularly punctuated by policy guidance within the country's health and education regulatory framework.

This situation necessitated a rapid response and concerted effort from all university spheres to ensure university operations' continuity. Empowering faculty and staff to deliver distance education while reassuring and engaging students was vital to managing the transition and successfully completing the academic year. Constant communication within and in between higher and middle management, frontline employees, and academic and non-academic Organizational Units (OUs) was identified as key to synchronizing the educational metamorphosis.

Action Research The classic model of action research proceeds in a series of steps, starting with the general idea and involves a great deal of fact-finding from first-hand experience [19]. The iterative process of the action research ends-up taking the form of a spiral of steps of planning, acting, and observing and reflecting [20, 21]. This ongoing cycle of action research constituted the foundation of the MBBS program rapid transition. By virtue of design [19, 22], the adopted action research was conducted *by*, *with*, and *for* people, rather than research *on* people [23]. Accordingly, the University set-up a COVID-19 taskforce that steered the transition and guided the operational aspects of the educational delivery in discussion with academic leadership.

Three months after the transition, in an attempt to evaluate the experience from the perspective of the students and the faculty, the OU at MRBU handling the Quality Assurance and Institutional Effectiveness portfolio (i.e., the Strategy and Institutional Excellence department) assembled a data collection tool (throughout June 2021) that was contextualized to match the intricacies of the situation [14, 24]. This tool was developed after thorough consideration of other similar tools assembled by other universities. It was first deployed in another college of the same university; in that investigation, the tool (through Cronbach's Alpha test and Principal Component Analysis) proved to be reliable and valid [25]. This tool was composed of five components that were measured with a five-point Likert-type scale (1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree). The first four components correspond to: clarity of the explanations concerning the transition, effectiveness of the utilized Information Technology (IT), support received and opportunity to voice one's opinion, and online materials and resources. As for the last component, it inquired about the perception of both groups of stakeholders in relation to the transition experience (as a whole). In the context of the current study, the tool proved to be internally consistent and externally valid, as well [26].

Results

Planning Phase: Determining the objective of the transition, and the path and means towards attaining it

The planning phase of the adopted action research was ultra-rapid constituting a narrow two-week period, during which the objective of effectively transitioning was clarified, the path to the goal and the available means were determined, and a concrete strategy of action was developed. The strategic

approach centered on ensuring completion of planned curricular delivery and assessment for the academic year with reasonable modifications, upgrading digital resources, upskilling and supporting faculty, staff, and students, and ensuring safety by complying with health and education regulatory bodies. Procurement of additional digital resources, and faculty and student on-boarding were accorded top-priority. The institution identified and invested in Microsoft Teams as the chosen digital medium to deliver teaching remotely. The Acting phase, in succeeding paragraphs, describes the initiatives used to implement the strategy.

Acting Phase: Transitioning of the undergraduate medical program at MBRU to distance learning

The acting phase of the adopted action research revolved around four interrelated aspects (Figure 1):

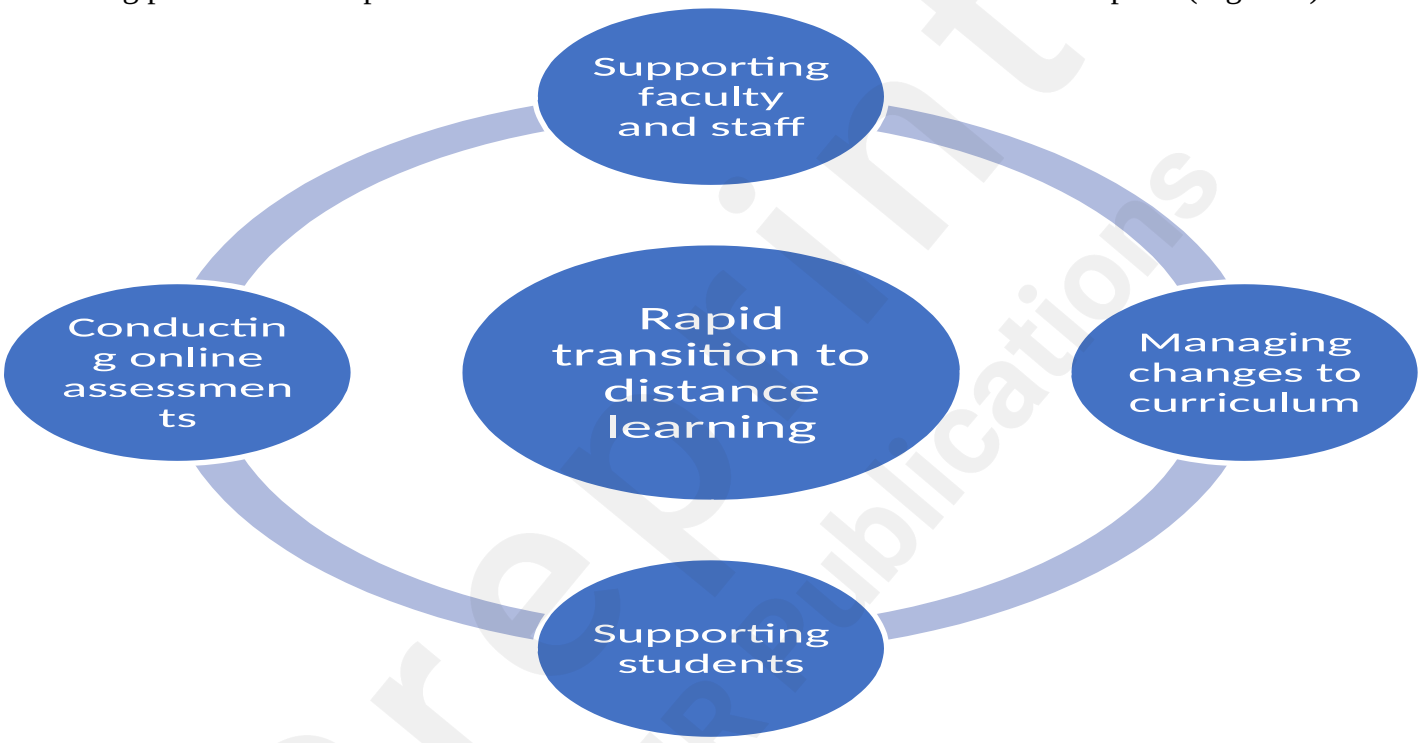

Figure 1 Four interrelated aspects of the transition (i.e., acting phase of the adopted action research), illustrated as balls that needed to be concurrently juggled.

1) Supporting faculty in curriculum delivery via distance learning

Prior to the onset of COVID-19, faculty development was a year-round activity targeted to identified areas of development and conducted both by colleges and the Institute for Excellence in Health Professions Education (ieHPE). The ieHPE is the first of its kind in the Middle East, moving beyond traditional departmental and disciplinary compartmentalization to create new knowledge, enable capacity-building, and promote knowledge translation. It involves education and capacity building, research and scholarship, and community outreach and engagement. During the transition, the CoM, with the support from the ieHPE and the Smart Services and Projects (SSP) units jointly, developed and implemented a series of initiatives to support faculty in effectively delivering distance education. The SSP is the MBRU arm that handles all the needed IT support, serving MBRU students, faculty, academic and administrative support staff, and alumni. SSP is composed of several units that work together to provide comprehensive IT services [e.g., operating the Learning Management System (LMS) and all digital education and assessment tools, and overseeing the University-wide evaluation system and the intranet] as well as customer service (e.g., IT Help Desk, and IT project management and delivery) to the MBRU community-at-large. There was a sharp focus on remote digital upskilling with short intense teaching and learning modules and a 24x7 Microsoft Teams-anchored

community-of-learners helpline. The initiatives that were meant to support the faculty throughout the transition consisted of the following activities:

Raising faculty awareness of available resources to support distance learning

An immediate needs assessment survey was assembled to gauge faculty members' familiarity with online teaching, expectations, requirements, and level of assistance required. The ieHPE subsequently organized sessions explaining the paradigm of online education and contrasting it to traditional classroom teaching. The different modalities to be employed, such as synchronous online delivery of didactic sessions and pre-recording didactic sessions by creating Screencasts, and Podcasts were also socialized. The SSP shared with faculty the available resources that could support such modification of pedagogy.

Faculty learning and development

The staff at the ieHPE organized for and delivered hands-on workshops and 'drop-in' sessions for faculty to consult for the optimal learning and teaching configuration(s) depending on the nature of the teaching session as well as modifying teaching approaches to suit distance learning. Specific hands-on training using Microsoft Teams and Live Lecture Capture were provided. Any hardware updates and modifications needed by faculty were provided by the SSP team, as well. Additional support and training were provided for faculty on maximizing engagement with learners in the online environment, including creating a live asynchronous classroom and discussion forums.

Supporting the faculty and staff mental health

There were many measures put in place to ensure all MBRU employees (faculty and staff) are supported in terms of their mental health. To start with, all employees had access to the university counselor and were encouraged to reach-out to the counselor’s office to schedule for an appointment when the need arises. In addition, the counselor offered weekly online group relaxation sessions, open to all employees. Also, standing meetings continued as per the norm to maintain cohesion and interaction between colleagues (which also indirectly played a protective role when it comes to the employees’ mental health). Finally, committee chairpersons and phase directors kept an eye on all employees and provided enhanced support throughout the experience.

2) Managing changes to the curriculum

Under the auspices of the Office of the Dean of CoM and with the assistance of the Curriculum Committee, the academic calendar was immediately adjusted, and schedules revised. This included bringing the Spring break 2 weeks forward to create the space for preparation. Together with the accompanying modifications of roles and responsibilities, these calendar changes were instantly communicated to instructors. Implementation was regularly monitored by Phase Directors and Course Coordinators. At the same time, weekly meetings were scheduled with the Dean of CoM to discuss progress at the college level and with the respective academic committees' chairpersons to share updates and directives from the Ministries of Public Health and of Higher Education. As part of the implementation phase, a gap analysis was performed to ascertain the impact of reverting to online learning on the respective phases' curriculum outcomes. This included measuring Course Learning Objectives (CLO) achieved and comparing them to the CLOs of the respective courses as per the programs and study guides. All objectives set for Phase 1 (which aims at introducing students to basic concepts in medicine) were met, while one course (namely: Foundations of Clinical Medicine-IV) in Phase 2 was significantly affected since it is designed to deliver on experiential clinical skills learning in the university's simulation center. The impact was most significant on the Phase 3 curriculum since students could not complete the last two clinical rotations; however, all didactic

teaching was carried out online. Concerted efforts were made to make-up for the lost clinical experience through case-study based Aquifer sessions and online case-based discussions. Longitudinal COVID-19 rounds, led by clinicians in the hospital, were also conducted every week. This initiative constituted of an innovative educational approach, where a group of students (on a rotating basis) would address a particular aspect of COVID-19 and its updates (e.g., socioeconomic factors or medications), and collate them as an all-encapsulating infographic. During the session, the assigned team facilitated the discussions using the infographic as a common ground. Mindful of the gaps, it was decided to introduce a 3-week "enhanced induction" at the start of the following academic year, which was meant to address identified deficiencies for all Phase 3 students.

3) Supporting students during online education

Communication with the students

The Student Services and Registration (SSR) OU was instrumental in communicating and updating students throughout this period. This included highlighting changes to the schedule, sharing of ministerial directives, changes in examination modalities, and the implementation of the Pass/Fail option. Course coordinators were tasked with sharing course specific changes and weekly planning schedules.

Students' connectivity and readiness

The SSR surveyed students to determine their ability to fully participate in online activities by requesting the specifications of the devices' students would use to connect online, as well as the stability of their internet connectivity and bandwidth. Access to Microsoft Teams and training in the use thereof was also provided. Continuous IT support was also made available to all students.

Students' connectedness and engagement

Student engagement prior to the pandemic was monitored through an established in-class attendance record, academic advisor meetings with digital records and follow-up, and meetings with phase directors and assessment chairs.

During the transition, all learning materials were shared on the LMS, well in advance of the online sessions. At the same time, students received weekly updates from course coordinators on the course schedules and presentation modes. Individual instructors posted expectations as well as formative assessments for sessions on the LMS.

Student engagement was further monitored via real-time logging on to the synchronous online sessions as well as extracting data of their engagement with learning material on the LMS. Course reports were compiled weekly, and those students who did not engage adequately were directly contacted and encouraged to improve their participation. SSR also followed up these students to determine any underlying reasons for their insufficient engagement (e.g., connectivity issues or personal hurdles). Appropriate actions followed. Academic advisors were also vigilant in engaging their advisees for early identification of challenges and prompt support to mitigate adverse outcomes.

Students' health, wellbeing, and mental health support

Prior to the pandemic, several agencies supported the students for academic and non-academic needs including but not limited to: Academic advisors, Office of the Assistant Dean of Student Happiness and Wellbeing, SSR, and the Student Counsellor. Each has independent and interdependent functions. The on-campus life was steered by leadership of the Student Council and a host of extra-curricular activities through student clubs.

Due to the anticipated burden of deviating from the known traditional on-campus to complete off-campus remote teaching and learning online, and the uncertainty of the psychosocial effects of the pandemic on faculty and students, it was also important to look after the health and wellbeing of all

the community members, especially the students. The SSR, together with the students' council, scheduled various online extracurricular activities to support and maintain a sense of community amongst the student body. Furthermore, the student counselor developed a series of relaxation sessions and sessions aimed at equipping faculty and students with internal resources and coping mechanisms to deal with anxiety and stress.

A peer mentoring program was also implemented. Since Phase 3 students could not return to their clinical placements, it freed up some of their time, and volunteers were recruited to tutor Phase 1 students specifically. This acted as a support system to the freshman students and provided senior students with a sense of purpose.

Towards the end of the academic year**,** it was also decided to build in an extended study break before the final examination giving students sufficient time to consolidate learning material and prepare for examinations.

4) Conducting online assessments

The university had initially invested in a proprietary online examination platform (ExamSoft) at the launch of the MBBS program, which was used for student assessment on-campus before the onset of the pandemic. On the same platform, end-semester and end-year examinations and other forms of student assessment were delivered remotely during May-July 2020. The transition to online examination was therefore smooth as a remote proctoring tool was added to the existing digital platform to ensure academic integrity. This was deduced from the large proportion of CLOs met, student performance (assessment and progression) which did not differ from previous iterations, and student and instructors' satisfaction with the rapid transition in the end-of-course surveys [14]. However, the main challenge was how to ensure proper identification of exam takers and avoid unauthorized student access to materials during examinations. Accordingly, an additional capability of remote proctoring was added to the examination platform to ensure the integrity of the assessment conducted remotely. Moreover, modified electronic versions of Objective Structured Clinical Examination (e-OSCE) constructed in-house and video case-based evaluations were effective as the best-fit for purpose in a remote setting.

Observing and Reflecting Phase: Challenges and triumphs

Educational disruption is not an isolated phenomenon amidst a pandemic, its acuteness most palpable at the onset of the forced transition. Despite yeoman efforts made at every level, uncertainties created by educational directives that were in turn dictated by rising infections created varying communication delays across the board. All round effects on fears of infection and coping with isolation had to be balanced with the fact that the show had to go on. As expected, despite close monitoring and support, vulnerable individuals and borderline performers were most impacted more through academic stress than measurable on performance.

Yet, several short- and long-term gains have been made. The digital efficiency enabled the educational delivery and administrative meetings to achieve heightened focus, brevity, and timeliness. Recordings afforded flexibility, archiving, and efficient use of time; live sessions provided impetus for innovative online activities. As one year of living with COVID-19 has been navigated through, interesting and beneficial changes have come to stay. In our context, these abiding changes include a digital revolution, tailor-made certifications in digital teaching, hybrid teaching, and adaptation of the lessons learnt from e-OSCE to undertaking e-MMI (electronic-Multiple Mini Interviews) for new admissions to programs. In terms of the stakeholders' perception of the experience, both groups appeared quite satisfied. The percentage of the total average of satisfaction among stakeholders was 76.4% [26]

Discussion

COVID-19 created a window of opportunity for action research in medical education. Just like any

other action research [17, 18], the outcome of transitioning the MBBS program at CoM was not defined a priori, and resulted from the involved stakeholders' capacities, interests, and actions. It was apparent upfront that the stakeholders and their work will metamorphose but what form it would take could not have been predicted. The MBRU values [27]: Respect, Integrity, Connectivity, Giving, and Excellence, enabled the process through remaining at the core of it and acted as the stakeholders' compass throughout the journey. Leveraging the internal resources, including but not limited to the existing IT infrastructure and support team (i.e., SSP), and the internal expertise in health professions education (i.e., ieHPE), was also fundamental to the transition. As such, the changing public needs due to COVID-19 were attended to via deploying action research to restructure the university and its relationships and fostering the key positive elements of MBRU.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines "educational emergency" as a crisis created by conflicts or disasters that have destabilized, disorganized, or destroyed the education system and that requires an integrated process of crisis and postcrisis support, recognize the importance of ensuring education continuity following disasters, and take the lead in promoting education as part of emergency response and for long-term recovery [28]. COVID-19 impact on education was an unexpected bio-disaster. Adaptation to the changed circumstances and mitigation of its impact drew on known and yet unknown resources to devise solutions. It was evident through the process adapted in this study that four interrelated aspects of the transition needed to be closely followed-up on. These include managing the supporting faculty members in delivering the content, managing curriculum changes, engaging with the students to facilitate the distance learning experiences, and conducting online assessments. This study bridges a gap in the literature by show-casing a process through which a medical university in the Middle East leveraged its internal resources to abruptly transition an MBBS program.

The first educational responder was China, a country where the pandemic started, which did not benefit from hindsight of coping strategies to this specific threat. In contrast, the rest of the world had a three-month lag period before COVID-19 arrived at their doors. In an insightful case-study from Peking University, an educationist reflected that five high-impact principles of online education served them well "(a) high relevance between online instructional design and student learning, (b) effective delivery on online instructional information, (c) adequate support provided by faculty and teaching assistants to students, (d) high-quality participation to improve the breadth and depth of student's learning, and (e) contingency plan to deal with unexpected incidents of online education platforms" [29]. In MBRU, the navigation of the curriculum retained the planned design and delivery as e-platforms for teaching and assessment existed since inception. It did require escalating efforts towards stabilizing capacity through rapid, expedited faculty development on additional e-tools to maintain the teaching and keep it engaging. Investment in the identified Microsoft Teams platform and student orientation provided sustainability.

Part of the previous reluctance across the medical professions towards remote learning is the perception of the inability to effectively deliver practical learning. Yet, institutions surmounted such obstacles, where for example Anatomy teaching in Australian and New Zealand universities balanced the loss of "hands-on" experience and pedagogy with "six critical elements… community care, clear communications, clarified expectations, constructive alignment, a community of practice, ability to compromise, and adapt and continuity planning" [30]. The use of a blended pedagogical framework through a social media application (SMA)-integrated "interactome" strategy came in handy during the pandemic in Anatomy teaching at MBRU [11]. Interestingly, the usage of MUELE, the official e-learning platform used at Makerere University was much lower in their College of Medicine compared to other colleges at the same university [3]. In this paper's reported transition, there was least interruption in the first three years in learning and teaching, and assessment. There was only one cohort in the first clerkship year, and the challenge to replace clinical site clinical rotation with virtual, albeit real-time interactive sessions was a compromise at best.

Virtual learning in COVID-19 times helped reimagine and blend telehealth's well-established

practice, which had previously been limited to provide health access to remote areas, by bringing it center-stage in the educational process [31]. It drew students' attention to the rapidly advancing innovations in delivering home healthcare and the expanding inventory of handheld devices and apps that help monitor chronic ailments.

Student support acquired an entirely new meaning during the acute transition to coping with isolation and learning at the same time. High levels of anxiety and stress and the resurgence of pre-existing mental disorders identified through structured interviews were not unexpected [32]. Addressing them through counseling and psychoeducational interventions was, of necessity, the need of the hour. In our short journey, this was not left to chance with active reaching-out to students and at multiple levels from university leadership, academics, advisers, and counselor services. All educational functionaries also searched for new skills to deliver their respective roles in *working from home* with unexpected distractions from people and competition for space.

Community engagement is a vital activity of Universities and students' engagement is a given. This engagement becomes even more critical for students of medicine when a health disaster strikes. It becomes supplementary to curricular learning, as pandemics constitute live exposure to learning emergency medicine and public health responses [33]. An interesting case study of higher education response to disruption during the Christchurch earthquake of 2010 provides interesting lessons in the dynamic way service-learning made curricula responsive and engaging, turning an educational disruption into a pedagogical opportunity [34].

The current study through action research provides thorough reflections on a particular experience that is relevant to other health professions education stakeholders. By virtue of this study's design, the generalizability of its findings is limited to institutions that are characteristically and contextually analogous to MBRU. Moreover, since the focus of this study was on the inductive process adapted by the institution to effectively respond to a crisis, it was purely descriptive. It would be worthwhile for follow-up studies focusing on a single institution to capture the perceptions of several stakeholders and to strive to systematically integrate quantitative and qualitative data via a mixed methods research design.

Conclusion

This university-wide action research highlights the *first responder in educational crisis* experience of a recently established undergraduate medical program of a young university at the outset of the COVID-19 outbreak and lockdown. Seminal triumphs included building on a strong existing digital base, a vision for innovation, and a modest and cohesive team that was key to agility, rapid decision-making, and implementation. Challenges spanned uncertainty of endpoints, decisions on-the-go, clinical skills learning and testing, and blurring of work-rest boundaries. The educational *leap of faith* was not based on false bravado; instead, it relied on strength of purpose, sound digital infrastructure and focused reorientation and delivery. Experiences of newly devised innovations and adaptations towards multiple formats of remote assessments will round-up and reverse engineering to mesh the *new normal* with the *old normal* academic journey narrative. A year on, digital upscaling and upskilling and hybrid educational experiences have come to stay.

Conflicts of Interest

None declared.

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Supplementary Files

Untitled.
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Figures

Four interrelated aspects of the transition (i.e., acting phase of the adopted action research), illustrated as balls that needed to be concurrently juggled.