

ARTICLE INFO

Submitted: 07-08-2020

Accepted: 21-08-2020

Online: 30-12-2020

Recommendations for High-Stakes Examinations for Public Malaysian Medical Faculties during the COVID-19 Pandemic

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To cite this article: Baharuddin KA, Abdul Rahim AF, Abdul Aziz YF, Abdul Manap R, Omar AM, Singmamae N, Zulkifli NF, Ismail S, Omar E, Kadir F, Mohtarrudin N, Mohd Noor MA, Ismail MA-A, Mat Pa MN, Mohd Ismail ZI, Nik Lah NAZ. Recommendations for high-stakes examinations for public Malaysian medical faculties during the COVID-19 pandemic. *Education in Medicine Journal*. 2020;12(4):25–31. <https://doi.org/10.21315/eimj2020.12.4.4>

To link to this article: <https://doi.org/10.21315/eimj2020.12.4.4>

ABSTRACT

The COVID-19 pandemic forced the Deans' Council of Public Malaysian Medical Faculties to tackle the issue of examinations in the face of movement control orders (MCO). A task force decided that final professional examination is necessary and three recommendations have been proposed. Online examination is among the best option with strict adherence to the Malaysian Medical Council guidelines. The majority of the universities used a Moodle-based Learning Management System; the examination will therefore mainly cover cognitive outcomes focusing on final professional exit examinations. It felt that cheating, although a real issue, is manageable and came up with several recommendations for the implementation based on likely outcomes of the MCO.

Keywords: *High-stakes examination, Online, Medical education, Pandemic*

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INTRODUCTION

Changes are inevitable; what was normal yesterday may not be so today. During the current COVID-19 pandemic, the term “new normal” became popular to describe the new way we socialise, work, learn and live our lives. Medical education is also not exempted from this new normal. Social distancing, movement control order (MCO) and a ban on mass gatherings caused many medical faculties to temporarily halt their operations while reassessing the situation and strategising the best way to move forward. Nevertheless, these invisible forces have given us the fortuity to empower our online teaching and learning activities.

Synchronous and asynchronous online teaching became a norm in the new normal. Video conferencing platforms like Zoom, Cisco Webex, Microsoft Teams and others have become the platform for synchronous online learning. Many medical educators enjoy it but a few find it somewhat vexing. However, the final hurdle that medical educators need to leap over is the conduct of the examination, either theory or clinical examinations, whenever it is due.

In Malaysia, the first case of COVID-19 was reported on 25th January 2020 (1) and the first MCO was enforced on 18th March 2020 (2), which includes mandatory closure of higher education institutions.

In response, on 22nd April 2020, the Deans' Council of Public Malaysian Medical Faculties formed a task force comprising all academic deputy deans of 11 participating medical faculties and representatives from medical education departments. This task force was given the responsibility to look at the feasibility of online examinations for medical programmes in Malaysia during the pandemic and provide recommendations for the Deans' Council of Public Malaysian Medical Faculties.

This article reports on the various issues discussed by the task force and the recommendations it made regarding the assessment.

ISSUES DISCUSSED

Learning Management System

To achieve a level of standardisation amongst the medical faculties, the learning management system (LMS) used by each university was identified. An LMS is a software application used for delivery of an online educational course, including assessments. Table 1 shows that all universities have an LMS; Moodle being the most popular. By having an established LMS, theory examinations should be able to be conducted online.

Table 1: LMS of the public universities in Malaysia

University	LMS	Name
Universiti of Malaya	Moodle	SPeCTRUM
Universiti Sains Malaysia	Moodle	eLearn@USM
Universiti Kebangsaan Malaysia	Moodle	UKMFolio
International Islamic University Malaysia	Moodle	iTa'LeEM
Universiti Putra Malaysia	Moodle	PutraBLAST, PutraMOOC
Universiti Malaysia Sarawak	Moodle	UNIMAS eLeap
Universiti Malaysia Sabah	Moodle	smart3V
Universiti Teknologi MARA	Home-grown	i-Learn
Universiti Sains Islam Malaysia	Moodle	GOALS
Universiti Sultan Zainal Abidin	Moodle	e-KeLIP
Universiti Pertahanan Nasional Malaysia	Moodle	eLearningv2 UPNM

Coverage of Learning Outcomes by Online Assessment

Learning outcomes define what a student should know or can do as the focal point of the learning process (3). Accordingly, assessments should reflect the learning outcomes and provide essential assurance to a wide variety of stakeholders. However, with the current situation, flexibility to redesign the assessment should be contemplated.

Learning outcomes are commonly classified using the Bloom taxonomy into cognitive, psychomotor and affective domains (4). Valid assessment of the psychomotor and affective domains, particularly in clinical performance assessments using online methods is difficult as it involves face-to-face observations (5). However, the assessment of certain components of clinical skills such as history-taking and management might be possible. Table 2 shows examples of various possible online assessment modalities for various types of clinical learning outcomes.

Table 2: Competency domains of clinical learning outcomes and possible online assessment modalities

Clinical learning outcomes	Online assessment modalities		
	Cognitive	Psychomotor	Affective
Application of knowledge	MCQ, MEQ, SBQ		
Problem solving			
Clinical reasoning	Online clinical viva		
Ethical reasoning			
Diagnostic ability			
Patient management			
History taking skills		Online history taking (real/simulated patients)	
Communication skills			
Physical examination		Pre-recorded video (students demonstrate physical examination) + online mini clinical viva	

(continued on next page)

Table 2: (continued)

Clinical learning outcomes	Online assessment modalities		
	Cognitive	Psychomotor	Affective
Professionalism			Online clinical viva Pre-recorded video (students demonstrate physical examination)

Notes: MCQ: Multiple choice questions; MEQ: Multiple essay questions; SBQ: Scenario-based questions.

High-Stakes Examinations

The task force focused mainly on high-stakes examinations, namely professional examinations since they are the basis for major decisions (6). The final professional examination is an exit examination where a graduate shall demonstrate competency in all the outcomes (7). The components of the examination include the theory component which mainly focuses on the cognitive domain; and the clinical component which focuses on psychomotor and affective domains. The final professional examination is regarded as the most difficult examination by the majority of medical students as they must be able to integrate all the domains efficiently.

Issues with Online Examination

Several issues have been identified by the task force. First, the conduct of the online examination must be synchronous or simultaneous for all students involved to minimise cheating. Hence, internet connectivity must be optimum. During the conditional MCO, students are allowed to find better internet coverage, therefore, the task force hopes that this issue will be minimised.

The second issue is the security of the LMS, as the students are not staying in one centre and therefore, the environment during the conduct of the examination is beyond the control of the universities. This situation might induce cheating among candidates, which is a validity threat (8). The Malaysian Medical Council (MMC) has provided

a guideline to minimise cheating during non-proctored and proctored online examinations (9). Shuffling of the questions and the answer's options are also ways to reduce cheating. The hard truth is that cheating among medical students is often, no matter in which format (10). Apart from the measures described, nurturing honesty among students should be an important strategy (11, 12).

The task force has also decided that each university will provide logistical and internet support to all nearby students regardless of their parent university should interstate travel be disallowed for students. This could also mitigate the risk of poor internet connectivity and validity threats.

Another issue is the assessment of psychomotor domain during the examination. Creative methods may be required for the assessment but still limited to the cognitive aspects of clinical skills (13).

Recommendations of the Task Force Regarding Examinations

Despite countries like Italy and UK skipping final year medicine examinations to allow their final year students to join the front-liners (14, 15), the task force feels that the urgency is not present in Malaysia and the final professional examination will still be conducted. The task force has come out with three recommendations to the Deans' Council of Public Malaysian Medical Faculties to decide. These recommendations still depend on the continuation or cessation of the MCO and updates by the National

Security Council and the Ministry of Higher Education.

- (a) Recommendation 1 is based on the situation where the MCO is lifted in June 2020. Students will return to the campus and the examination will be conducted with strict measures to prevent the spread of COVID-19. The date for professional examinations are unchanged (August to October 2020), depending on each university.
- (b) Recommendation 2 is based on the situation where the MCO is extended and students are not allowed to return to the campus until a later date. The period for the professional examinations is unchanged. In this scenario, the conduct of the examination will be fully online, adhering to the MMC Online Exam Guidelines. The task force decided not to accept pre-recorded videos as students might not be comfortable to speak and act in front of the camera, as well as differences among students regarding technology skills.

To certify the clinical competency of the graduates, a refresher or supplementary course will be conducted before their internship placement. If assessment data from the candidates' previous postings could be retrieved, it could also be considered as indicators of their clinical competency (16).

- (c) Recommendation 3 is also based on the situation where the MCO is extended and students are not allowed to return to the campus. However, in this scenario, the final professional examination will be deferred to a later date, probably in early 2021. Universities may consider conducting theory examinations online at an earlier date. Those who pass will be awarded a conditional pass until they sit for their clinical examination in early 2021.

CONCLUSION

The impact scale of the present COVID-19 pandemic is unprecedented in recent history. Despite that, the Deans' Council of Public Malaysian Medical Faculties was able to convene and come up, via the task force, with tentative plans to face the situation. In hindsight, this parallels the "4 Ds" suggested for higher institutions in facing the pandemic situation (17): "Discover" the situation by getting all possible information; "Decide" on plans of action without waiting for all possible data to come in; "Design" a portfolio of actions which are realistic, quick, pragmatic and flexible; and "Deliver" the solutions in a systematic and organised manner. At the time of writing, the MCO have been considerably relaxed and final-year students are allowed to return to their respective medical faculties. The task force is cautiously optimistic that Recommendation 1 can be applied.

Tackling the emergent assessment issue has given the council valuable experience in inter-faculty communication and cooperation and hope that this will continue for the betterment of medical education in Malaysia.

ACKNOWLEDGEMENTS

The task force members would like to express their great appreciation to all medical education personnel in all public Malaysian medical faculties who were directly or indirectly involved with this task force.

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