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# Conducting a large-scale summative Virtual OSCE (VOSCE) in a University Medical Centre during the COVID-19 pandemic

Teresa Diana B. Bongala

*Department of Obstetrics and Gynaecology, Faculty of the College of Medicine, University of the East Ramon Magsaysay Memorial Medical Centre, Philippines*

## I. INTRODUCTION

The world will never be the same after the COVID-19 pandemic. Education has had to evolve. Evaluation of cognitive skills is still achieved by written examinations administered through learning management systems. However, an integral part of evaluation, the Objective Structured Clinical Examination (OSCE), which assesses the students' ability to obtain, communicate information, perform physical examination, diagnose, and solve problems, could not be given due to COVID-19 restrictions.

Simulation during teaching and assessments like the OSCE have been done worldwide, (Nguyen et al., 2015) and have been utilised in our university for more than twenty years. Because of lockdowns due to Covid-19, the OSCE was given online in medical schools worldwide, however the number of students were limited (Boyle et al., 2020; Lara et al., 2020). In the Philippines, by December 2020, immunisation against Covid-19 had not started, and travel was still restrictive, hence face-to-face classes were still limited. (Department of Education, 2020). Hence, the Department of Obstetrics and Gynaecology of our university planned and conducted the first large-scale summative virtual OSCE (VOSCE) for Level III medical students.

## II. METHODS

The summative VOSCE was conducted using a Zoom licensed Education account, with features called "Breakout Rooms" and "Screen Share" and the Canvas learning management system. There were 17 faculty, 10 residents, 15 post-graduate interns, 10 Level IV and 440 Level III students who participated. The Level III students had synchronous and asynchronous lectures for four-and-a-half months in Obstetrics, and nine weeks of small group discussions (SGD).

The table of specifications was based on the learning outcomes in Obstetrics and skills taught during SGDs. Six sets of examinations with four stations, were prepared. The first two stations were given in Canvas, while the last two "performance" stations, namely history taking, and Physical Examination (PE) were given over Zoom. The evaluation in OSCE was modified to fit tasks for VOSCE. It underwent an MPL setting by three members of the faculty using the Angoff method. (Livingston & Zieky, 1982)

All participants underwent orientation. The students were informed of the materials they needed: a computer, for Canvas and for zoom in stations 3 and 4; a mobile device, for proctoring, communication and to demonstrate performance /PE in Station 4; and other materials needed for Station 4. The faculty were instructed to Screen Share tasks via Zoom in the

“performance” stations and oriented on student evaluation and result submission.

Three days before the VOSCE, a simulation involving clinical clerks, post-graduate interns and residents was conducted. Clarity of video, audio and internet speed were checked. Timing and transfer of examinees between breakout rooms was also rehearsed. The tasks for Stations 3 and 4, and evaluation forms, were sent to the faculty the 12 hours before the VOSCE.

Thirty minutes before the VOSCE, the students underwent identity verification, their gadgets and positions checked. Concurrently, the post-graduate interns, who acted as patients, were given the script.

The examinees, in stations 1 and 2, given clinical vignette and images of speculum examination, had to diagnose and write a prescription. After Canvas stations, in another breakout room, the students were informed of materials needed for Station 4. In Station 3, they elicited

the history from a simulated patient, and in Station 4, they performed PE with annotation.

Communication with students was through Telegram and Zoom, while Viber was used between faculty and residents.

### III. RESULTS

Four hundred and forty students took part in the VOSCE. Post-VOSCE survey with 397 respondents showed that 382 (96.2%) students took it in the Philippines, and 15 (0.38%) students were out of the country.

Forty-three (10.8%) had internet speed  $\leq 10$ mbps. Thirty (9.0%) had connection problems/unable to view images in stations 1 and/or 2. Thirty students were given another examination, three hours post-VOSCE. Table 1 shows the location and the internet connection of the students, their perception of the VOSCE and the problems they encountered during the examination.

Questions	Number (%)
<b>Location during VOSCE</b>	
Philippines (except Manila)	230 (57.93 %)
MetroManila	152 (38.28%)
Outside of Philippines	15 (3.87%)
<b>Internet speed (mbps)</b>	
< 10	43 (10.8%)
10-100	328 (82.61%)
> 100	26 (6.5%)
<b>Orientation</b>	
Adequate	336 (84.63%)
Inadequate	47 (11.84%)
Absent	14 (3.52%)
<b>SGDs helpful</b>	
Strongly agree/Agree	319 (80.3%)
Neutral	58 (14.6 %)
Disagree/strongly disagree	20 (5.03%)
<b>Canvas rubrics helpful</b>	
Strongly agree/ Agree	335 (84.38%)
Neutral	49 (12.3 %)
Disagree /Strongly disagree	13 (3.3%)
<b>VOSCE problems</b>	
None	265 (66.75%)
Temporary disconnection	63 (15.86%)
Disconnection Stations 1/or2	30 (9.00%)
Internet lag	24 (6.04%)
Poor audio	15 (3.77%)
<b>Tension prevented me from performing well</b>	
Strongly agree/Agree	229 (57.68%)
Neutral	101 (25.4 %)
Disagree/Strongly disagree	67 (16.87%)
<b>Internet/gadget prevented me from performing well</b>	
Strongly agree/Agree	129 (32.49%)
Neutral	94 (23.7 %)
Disagree/Strongly disagree	174 (43.83%)

Table 1. Post-VOSCE Survey n= 397

#### IV. DISCUSSION

Participants orientation and the simulation were important in ensuring the success of this VOSCE. The students perceived that SGDs 319 (80.3 %), Canvas rubrics 335 (84.4%), and orientation 336 (84.63%), helped in their preparation. However, the students viewed that tension 129 (32.49%) and internet and gadget issues 229 (57.68 %) prevented them from performing well.

Passing rates were comparable, with OSCE 75.68 % and VOSCE 78.9 %. Moreover, the mean score of the VOSCE 81, was only slightly lower than OSCE mean, 82.07.

With ease of restrictions the following year, we continued using VOSCE because we obtained similar results to OSCE, it was less costly and easier to manage. Post-pandemic it will remain an important tool for formative and summative assessments. Among its advantages, there are examiners/faculty available for the VOSCE because it is online. Furthermore, it can be modified to administer some stations online, while conducting the PE stations onsite.

#### V. CONCLUSION

We have demonstrated that the VOSCE may be given successfully and will continue to play an important role in assessment post-pandemic. It is more convenient and economical to administer. Its main disadvantages include the possibility of internet disruption and gadget malfunction. However, with planning, innovation, orientation, and communication, it may be administered without major problems. It is reassuring that whatever restrictions we may face in the future, the VOSCE, will ensure we can continue to produce competent doctors, who will be part of the solution to the healthcare problems of the world.

#### Notes on Contributors

The author did the literature review, conceptualised and oversaw the implementation of the VOSCE, created the post exam survey, retrieved previous grades pre-pandemic, analysed the data and wrote the manuscript.

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#### Declaration of Interest

The author does not have any conflict of interest.

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- \*Teresa Diana B. Bongala  
64 Aurora Boulevard,  
Quezon City, Metro Manila,  
Philippines  
+639175776420  
Email: [tbongala@uerm.edu.ph](mailto:tbongala@uerm.edu.ph)