

Resilient practical assessment- Looking forward following a sociomaterial case study of a disrupted high stakes clinical assessment held during the COVID-19 pandemic.

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Introduction

Practical skills assessment is prevalent in many degree programmes, particularly those associated with healthcare education. The COVID-19 pandemic severely disrupted assessment due to social distancing restrictions, maximum room occupancy and movement around spaces rules. In addition, within healthcare, simulated patients were not able to be used in assessments. In this study, using a sociomaterial perspective, we aimed to explore the factors pertaining to a disrupted undergraduate medicine high-stakes Objective Structured Clinical Examination (OSCE). Study findings elicited important themes around building a resilient assessment system. These findings will enable educators and assessment coordinators to consider how to develop resilient assessment processes going forward.

Sociomateriality

Sociomateriality considers that all things, human and non-human are equal in terms of agency in that the thing under study can affect and be affected by other things. For example in the OSCE rooms, spaces, equipment, actors, students, ipads, checklists, blueprints can all exert actions.

"The OSCE can be framed as a sociomaterial assemblage where human and material components are meshed together producing multiple effects"¹

The OSCE format

The OSCE is a circuit where students complete various timed tasks (e.g. history taking, clinical examination) within a station before moving onto the next station. All students complete all stations on a site. The exam will be conducted simultaneously on multiple sites either in the same building or at another location. There will usually be a student, examiner & patient/mannequin in each station. [Figure 1]. In 2021, for the first time & due to the pandemic half the exam was also completed on an iPad with free text questions held in a lecture hall.

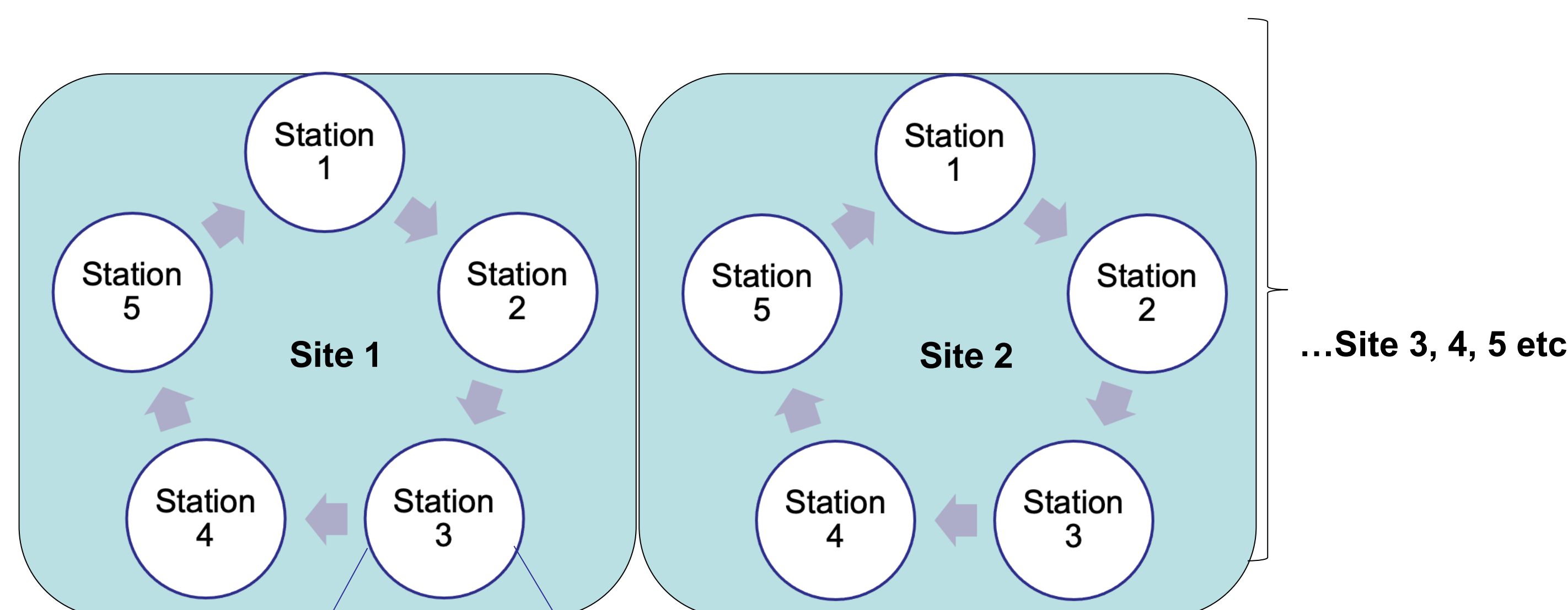


Figure 1: The OSCE station/site/run cycle setup including patients or mannequins, students and examiners (and in 2021, 6 virtual stations).

Methods

Qualitative Case study² of final year OSCE held during COVID19 pandemic.

- Documentary evidence (field notes, floor plans, paperwork).
- Photographic evidence of OSCE.
- Semi-structured interviews (including photoelicitation) of purposively sampled "under represented" voices (e.g. technicians, building manager, OSCE coordinator) within practical assessment organisation.
- Thematically analysed using sociomaterial framework on the background of COVID19 acting as a "magnifier" which identified issues of importance.

Results

Six semi-structured interviews lasting a total of 264 minutes were conducted, transcribed and analysed alongside documentary evidence & 32 digital images from the exam setup using qualitative methodologies. Key themes relating to assessment resilience were evident at both the planning stages and when looking towards the future especially with increasing student numbers being presented for practical assessment.

Anticipating time related challenges in circuitous exam format

"[Moving to video conferencing] posed logistical challenges so we built in extra time during the OSCE itself"

"I purposefully built in extra time in case we had to re-insert a student due to technical failure."

Planning for 'failure' at design stage of assessment

"[Being over two floors] has its challenges because especially if mannequins are needed, they're stored on the 1st floor, so if they're needed upstairs, we always have to take up spares."

Predictable challenges with equipment & people

Considering digital & technical failure challenges and equipment logistics

"So normally our university machines [computers] time out after an hour. So we had to have IT come and turn off all the timeouts on the televisions and the AV equipment because it does timeout normally, so that was a bit of a concern."

"[The app crashed..] we predicted that this might be a problem so I had created a backup system to use with a different password and [when this happened] I was able to log on and get the student up to the right place"

"But we've always got a member of staff trained in each of the scenarios, it's the same if they were in person and a patient fell ill, we can't always put the standby in, and so we've got a member of staff who can step in for a minute or three until we sort it out."

"We always have at least two spares, if we can, working and ready to go on the 1st floor. If the 2nd floor is being used, we always have another spare up there as well."

Changing dependence on available 'patients' & utilising technology

"Thinking of the future, but we were also keen to have more positive clinical findings. That's challenging because we use patient partners, but we also want to try and standardize the exam as much as possible. So thinking about introducing videos of positive clinical tests."

A resilient future: Looking forward following the exam 'post-mortem'

Practical assessment inclusivity & movement/space logistics

"[Can] an electric powered wheelchair be able to manoeuvre into the single rooms if we had more than one station [in that room]?"

"So as we're being more inclusive as an institute, we need to think of actually the people who are going to be sitting the exam, not just the exam."

Change based on reflection

"I honestly think that [Virtual communication stations] would be better done in a curtain booth at the other end of the room on a laptop. I wouldn't put it through the projector."



6 'Data interpretation' stations conducted on iPad app in a unidirectional format. Held in classroom to address 'no patient partners' directive.

Conclusion

Learning from a sociomaterial case study of a 'disrupted' OSCE can help make future OSCEs more resilient as we understand the complex sociomaterial entanglements present in practical skills assessments. Multiple data types within this case study methodology illuminated different issues and aspects which would not have been identified by interviews alone.



1. Rees et al. 2021. Materials matter: Understanding the sociomaterial assemblages for OSCE candidate performance. *Medical Education* 55(8):961-71
2. Cleland et al. 2021. The curious case of case study research. *Medical Education* 55(10):1131-41.