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CovSim 2018: A workforce education simulation to develop practice-ready graduates

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Abstract
This case study provides an overview of a cross-faculty interprofessional simulation event to help in the development of practice-ready graduates. The case study is based on a simulated music festival, CovSim 2018, which was used as a context for a set of collaborative capability learning outcomes. A series of six individual but interlinked simulation stations were developed, with a linear major incident narrative to help contextualise the learning outcomes. These simulations were: 1) preparation and then 2) immersion into the music festival, 3) social media, 4) emergency department, 5) healthcare leadership, 6) public inquiry. These simulations comprised immersive simulation elements, using innovative technology but underpinned with existing, evidenced pedagogical tools and structures. This project was designed, in part, to evaluate the feasibility of interprofessional education collaboration with seemingly disparate learners, and to assess whether this type of event could affect cognitive change. The case study described here outlined the implementation process and presentation of a multi-phase research project and analysis.

Introduction
This case study outlines a healthcare workforce education innovation, allowing the development of common employability skills ("soft skills" or "interpersonal skills"). Fifty years of inquiry support the use of interprofessional education (IPE) to prepare healthcare students for the workforce.[1] This integrating of care has a strong correlation to improved health outcomes, higher staff satisfaction and better acceptance of care.[2] To ensure integration of care in the health workforce, the effective transition from higher education to the work environment is fundamental.[3] To support this, there has been an emphasis on developing competencies that develop these common employability skills and a framework for these have been developed at Coventry University School of Nursing, Midwifery and Health. These collaborative competencies, as seen in Figure 1, allow learners to develop these skills together, regardless of discipline. However, difficulty may occur in the operationalization of using effective and innovative pedagogical tools to both engage learners and provide collaborative learning outcomes.

Figure 1. Coventry University collaborative competencies.

This case study is the first phase of a multi-strand research project, and the initial feasibility study is complete. The research question for this initial phase is: Is the use of interprofessional workforce simulation for undergraduate learners feasible? Therefore, a feasibility study was undertaken of a simulation-based team training (SBTT) event. This SBTT seeks to replicate an environment where students can undergo a process of cognitive

practice-based learning methods.[4] The process allows the learner to experiment with ideas and hone concepts in a safe environment with little consequence or risk to patient care. However, these types of events tend to be discipline or profession-specific, and so an evaluation of an event for all learners was initiated.

In addition, as part of the data collection and treatment for this event, a research study that utilized a within-groups survey method of what participants felt they would develop before the event and what they felt they developed after the event was undertaken. This is the second phase of this research strand for the CovSim 2018 cross-faculty events.

Case Presentation and Outcomes

In the case presented here, to prepare undergraduates for a realistic workforce framework in which to develop, a simulation story consisting of six separate but interlinked simulations were written. These were based on a simulated music festival and its aftermath, each of the simulations are shown in Figure 2. This "story" was chosen based on the learning outcomes for each station and what event could potentially precipitate the learning required. Although a music event was chosen, several options were considered, but all were based on an event and its aftermath. For organizational ease, all stations were 30 minutes long, learners all experienced the simulations in the same order, in a linear fashion. There was no assumption or requirement for pre-learned knowledge.

Figure 2. Picture board of the six simulation stations at CovSim 2018.

Music Festival Simulation

This workforce simulation started with a preparation station, a pre-briefing of the simulation activities, a vital aspect of effective simulation.[5] It consisted of a table-top exercise, enabling

the learners to contextualize some of the information before the immersive aspects of the next simulation stations. In addition, health and safety requirements were outlined, ensuring the learners were able to plan in a safe environment with the known conditions (e.g., learners were aware of impacting factors such as weather conditions and had an outline of the music festival), and learners received an event briefing. It was emphasized that this would be an experience to allow learners to explore and develop. After this pre-briefing station, learners were immediately immersed in a simulated music festival, via a 120° curved, 10-metre-wide projection screen and 30 square-metre activity space. In this station a nerve agent release and ensuing panic was simulated.

Social Media Simulation

The next simulation station was based on a social media exercise. Social media is an increasingly important communication method; a recent Reuters Institute report finds that "across all countries, younger groups are much more likely to use social media and digital media as their main source of news."[6] This, combined with the rise in citizen journalism, means breaking news stories and information – and misinformation – are often disseminated via social media before the traditional print and broadcast channels. The importance of managing social media in a crisis situation is therefore an important skill, especially in relation to a public interest story. The session, which facilitated participants to create and post to a simulated social media platform, built on earlier work[7] in response to the important role of social media in disaster management. Learners were required to make a series of decisions based around a non-linear narrative, promoting them to make decisions based on the fast-flowing information available to them at the time. This scenario was designed to deliberately overload the learners, encouraging them to consider triaging information as they might in a casualty management scenario. This then led to the next simulation, centered on the receiving emergency department.

Emergency Department Management

Errors in healthcare are often due to poor communication and have negative implications on patient care and organizational reputation.[8] Emergency departments are high-risk environments, requiring people to work together under pressure, often in demanding and unforgiving circumstances. It would seem obvious then to introduce SBTT to students to help them develop and refine their decision-making ability and build a strong team-working capability without the fear of patient harm. This station gave learners the chance to display, not only their ability to prioritize, but to be able to remain calm in the melee that was a department in crisis. Decisions at management level have ramifications that far outreach immediate health interventions. The learners can then better prepare for the work environment by learning together in fast-paced and stressful circumstances to an effective and positive end, resulting in safe decisions, and ultimately safer patient care.

Healthcare Leadership Simulation

The challenges of being in a problem-solving workforce role are immense, and usually learners would not experience such a challenge in a role until they are doing it in the workforce. Therefore, the fifth of the six simulations tested group dynamics, team co-operation and decision-making, similar themes to the previous simulations but at a wider system-level overall. The learners prioritized actions in a time-pressured environment and at two points in the simulation, a person role-played a member of NHS England, requested an update on the decisions being taken, which were to be reported back to the Prime Minister. This was to develop the learners' confidence in their decisions and replay this in a structured and comprehensive way, within a short time-frame. The pedagogy of this simulation was to

provide participants with an experience that could develop their critical and strategic thinking[9] in an environment akin to working as team when major situations arise in the workforce. This improvement in self-efficacy from simulations[10] and this scenario, while not having a "correct" list of actions to be produced was designed to support the development of confidence in one's own and one's team decision-making skills.

Public Inquiry Simulation

The final simulation was a public inquiry, which interrogated the learners not only as a test of memory but also to allow them the opportunity to justify their decision-making in a mock court environment. As with the other simulations, this took place in a representation of the workplace environment, in this case, an actual court room,[11] with a facilitator acting as the cross-examiner, in full legal robes and wig, further immersing the learner. The scenario was only a cross-examination simulation, rather than a full mock court simulation, mostly due to time constraints. A full debrief of the entire simulation event took place at the end of this simulation, including contact details for learner support systems. In addition, facilitators and everyone else who either took part or observed were debriefed and support systems shared.

Discussion

The case study presented here is the first phase of a multiple strand research project and the initial feasibility study is complete. If the initial question is whether the use of interprofessional workforce simulation for undergraduate learners feasible, then the presentation of this CovSim event would suggest that yes, it is feasible. It is self-evident, by the ability to develop and run the event, that it is possible to have an interprofessional workforce simulation. The participants in this first simulation event comprised learners of a range of disciplines across all four faculties at Coventry University.

In addition, as part of the data collection and treatment for this event, a research study was undertaken and a design that utilized a within-groups survey method of what participants felt. However, it is perhaps the fundamental evaluation, that of relatively permanent cognitive change, that remains to be evaluated. This longitudinal study is on-going, although initial results appear promising.

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