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## TECHNOLOGY

### A11 AN EVALUATION OF STUDENT VIEWS ON THE USE OF VIRTUAL SIMULATION IN UNDERGRADUATE PHARMACY EDUCATION

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**Background and aim:** In part due motivated by a lack of in-person placement opportunities for undergraduate pharmacy students during the COVID-19 pandemic, a UK university teaching team developed a programme of virtual simulated placement-style events to support undergraduate pharmacy students in developing skills and experience to support them in engaging with their foundation training. These experiences were developed at a time of significant change for undergraduate pharmacy training, as all new pharmacists being annotated as independent prescribers at the point of registration from 2026 onwards [1]. It has been reported that in medical students, the use of virtual patient simulation could improve clinical reasoning skills [2] but evidence of student views on the acceptability and implementation of virtual simulation in the target audience is limited and frequently not reflective of the style of self-directed simulation being utilized. This work aimed to evaluate final-year undergraduate pharmacy student views of the impact of the introduction of a programme of student-led virtual simulation on their education.

**Methods:** In academic years 2020–2021 and 2021–2022, an electronic questionnaire was distributed to final-year students who had recently been introduced to and given access to a range of student-led virtual placement experiences in academic years. Prior to administering questionnaires to students, the study was approved by the relevant school research ethics committee. Questionnaires were formed of a mixture of qualitative and quantitative questions, and asked students about their experiences of engagement with virtual simulation and views on the potential applications of virtual simulation in the curriculum. Quantitative data were analysed by simple descriptive statistics, and a critical review of free-text responses was performed through grounded theory to identify emergent key themes.

**Results:** A total of 43 student questionnaires were collected, with 18 responses (41.9%) being received in the academic year 2020–2021 and 25 responses (58.1%) received in the academic year 2022. 88.4% of respondents agreed that the introduction of virtual simulation would enhance their educational experience. Four key themes emerged from qualitative data analysis: individuality and autonomy, convenience, immediacy, and control. Students most commonly believed that the second year of the 4-year Master of Pharmacy programme is the optimal time for the introduction of placement-style virtually simulated experiences.

**Conclusion:** Final-year undergraduate pharmacy students believed that the introduction of a programme of student-led virtual simulation would enhance their educational experience. Students were found to value the convenience, control and autonomy of the introduction of student-led virtual simulation. **Ethics statement:** Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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## DESIGN

### A12 DEVELOPMENT OF A SUMMATIVE ASSESSMENT METHOD FOR INTERPROFESSIONAL SIMULATION AND OTHER INTERPROFESSIONAL EDUCATION (IPE) ACTIVITIES

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**Background and aim:** Collaborative learning is recognized as essential in ensuring the delivery of safe and effective healthcare. It is fundamental to creating the healthcare teams of the future [1,3]. Central to this, is the early exposure of healthcare students to multiple, healthcare professions to begin the process of thinking and practising in a more interprofessional way. Importantly, how the interprofessional experience is assessed is crucial to the success of collaborative learning. This was the background to the development of an interprofessional module within the School of Nursing & Midwifery at Queens' University Belfast.

**Aims:** (1) To collaborate on the development of additional IPE workshops to supplement an established interprofessional simulation model. (2) To develop an assessment component for the interprofessional activities, including interprofessional simulation. (3) To evaluate the process.

**Methods:** Drawing upon the expertise associated with the implementation of a highly successful interprofessional simulation programme, an interprofessional education (IPE) group was established with representation across the Faculty. From the outset, there was a need to have a shared understanding of the module and its complexities, and to work together to collectively support the pedagogy, shaping student learning and assessment, and providing the best educational experience [2]. The team collaborated on sourcing and establishing IPE workshops, developing reflective questions, as well as working on designing and integrating an online video within a digital platform, and streaming all students to one interprofessional workshop. An evaluation questionnaire was created using Microsoft Forms. The 17-item questionnaire incorporated three Likert scales, plus two either/or answers

and two questions on digital device/browser. The questionnaire had 10 qualitative 'free response' questions to allow candidates to elaborate, expand, clarify or illustrate their answers.

**Results:** The collaboration with staff across the Faculty of Medicine Health & Life Sciences resulted in the establishment of four additional IPE workshops to complement an established six. Total number of IPE workshops,  $n = 10$ . These workshops were positively evaluated by both students and staff and one workshop contributed to a national IPE award. Importantly, the video-based, reflective, summative assessments submitted following participation in the IPE workshops were of a high standard with students reflecting on the importance and value of having the opportunity to engage with other professions and on how the IPE simulated workshops adding to their learning.

**Conclusion:** Interprofessional opportunities that utilize a reflective video-based assessment contribute positively to the student experience and are a welcome addition to the undergraduate nursing curriculum.

**Ethics statement:** Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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## EDUCATION, TECHNOLOGY

A13

### MIXED REALITY SIMULATION TRAINING IN THE ASSESSMENT AND MANAGEMENT OF ACUTELY UNWELL PATIENTS IN UNDERGRADUATE MEDICAL EDUCATION: A PILOT STUDY

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**Background and aim:** Development and enrichment of the undergraduate simulation experience is needed due to its utility in developing the aspiring clinician and their ability to assess and manage acutely unwell patients. However, with its heavy resource demand, and the desire for technologically enhanced learning by 'Generation Z', novel simulation modalities must now be considered [1]. Mixed reality (MR) technology provides a platform to deliver such simulation training; however, it is yet to be studied in this context. To evaluate this, we conducted an observational cohort study to assess if MR simulation improves students' perceived ability to assess and manage acutely unwell patients.

**Methods:** We recruited 32 undergraduate medical students and asked them to rate their ability to assess and manage acutely unwell patients out of 10, before delivering a 2-hour MR simulation teaching session using the Microsoft HoloLens head-mounted device and HoloScenario software produced by

GigXR [2]. They were then asked again to rate their assessment and management ability alongside their experience of the MR system and its usability. Data were analysed using paired *t*-tests to assess for significant improvement.

**Results:** Analysis of the MR teaching session showed a statistically significant improvement of student scores in their perceived ability in assessment ( $p = .00$ ) and management ( $p = .00$ ) of the acutely unwell patient. In self-rated ability to assess the unwell patient, mean scores improved by 1.09 on the 10-point scale (95% CI [0.67, 1.52]) with 89% of students feeling more confident in assessment. In self-rated ability to manage the unwell patient, mean scores improved by 1.63 (95% CI [1.15, 2.10]) with 84% of students feeling more confident in management. Sixty-nine per cent of the students did not find the MR system easy to use, with 75% of students having technical issues and 38% experiencing side effects. Eighty-eight per cent of students believed the teaching experience to be beneficial to their learning.

**Conclusion:** MR shows promise in its ability to deliver simulation training and improve students' perceived ability to assess and manage acutely unwell patients. Advances in software availability and simulation exercises are required for complete integration into undergraduate medical curricula. Further research is required to assess if MR simulation objectively improves student performance in this area.

**Ethics statement:** Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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## TECHNOLOGY

A14

### DOES EVERYONE SEE IT THE SAME? AN EVALUATION OF THE ALIGNMENT OF PERCEIVED BENEFITS OF VIRTUAL SIMULATION BETWEEN UNDERGRADUATE PHARMACY STUDENTS, FACULTY AND STAKEHOLDERS

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**Background and aim:** In the aftermath of the COVID-19 pandemic, where access to traditional simulation environments and experiences was necessarily restricted, increasing focus has been placed on the use of technology in simulation. The use of virtual patient simulations has been shown in literature to increase interest as well as provide opportunities to practice clinical reasoning [1]. Opportunities to develop clinical reasoning are of notable importance in undergraduate pharmacy education currently owing to ongoing changes in pharmacy education, where newly qualified pharmacists will be annotated as independent prescribers from 2026 [2]. Evidence on the extent to which views on the perceived uses and benefits of virtual simulation align between different