Virtually there: Learning in a virtual pharmacy

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Simulation-based learning; professional education; experiential learning

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Course Details
Course Name: Bachelor of Pharmacy
Course level: Undergraduate
Years of the course: 1st, 2nd, 3rd, and 4th year
Course Delivery: On-Campus

Rationale for the strategy
For student-pharmacists as for practising pharmacists, professional communication (counselling, patient education) is a core competency to be developed, maintained and enhanced. This is a skill that can be developed by doing, by interacting with another student, staff member or virtual patient. Learning in role-play can be an effective strategy but is staff-intensive and somewhat artificial, lacking practice ambience. In an earlier cross-institutional research consortium, we had developed computer-generated virtual patients, which interacted with students and provided written feedback that could be downloaded for further reflection. This was perceived to be useful by students and beneficial in that they could practice as often as the computer laboratory was available.

Students often commented that learning at university is helpful for workplace learning, when learnt skills are implemented, however they reported being unprepared for how noisy and busy pharmacies can be. The virtual pharmacy has three encompassing screens, each of which can project a different part of the pharmacy and the activities and noises taking place. This has a more realistic and 'immersed' feel and this was the prompt for incorporating a virtual pharmacy into student learning.

Overview of strategy
The virtual pharmacy is a simulation-based learning strategy to enhance practice-based education in situated cognition, professional skills development and professional identity formation for student-pharmacists. This strategy incorporates role-playing particular roles of the pharmacist as relevant to the subject and year level. This experiential learning offers a low risk strategy to develop and practice professional communication capabilities in advance of workplace learning undertaken in authentic pharmacy sites where students enact those skills with real patients. This enhances student comfort and confidence, patient safety and often reduces supervisory load of the clinical practitioner.


**Implementation**

To implement a virtual pharmacy requires planning to:

1. Identify funding needs and support - this may be a multi-year project
2. Identify vignettes and backgrounds, varying in complexity that will allow greatest use of the technology across the four years of the course.
3. Develop scripts for patient vignettes to be projected within the virtual pharmacy
4. Source audio-visual support to develop (film and record) those scenarios
5. Source audio-visual technology and software (for example stadium or event software) to project the virtual pharmacy
6. Identify a large suitably shaped teaching space to convert into a virtual pharmacy
7. Outfit a teaching space with a model pharmacy that enhances students' interaction within the virtual pharmacy space
8. Incorporate PowerPoint projectors and standard lecture technology to facilitate scaffolding skills development prior to engagement
9. Train staff in the use of the technology
10. Develop written protocols for the use of the virtual pharmacy, year by year and subject by subject
11. Pilot with volunteer students
12. Review and refine protocols

**What Aspects Were Most Effective?**

1. The "suspension" of disbelief when students became immersed in role playing and responded as if the setting was authentic
2. The versatility of the virtual pharmacy for various communications such as non-prescribed medication requests; prescription medicine counselling; provision of disease state education; case presentations of various pseudo-patients
3. The successful adaptation to various year and skill levels among the student cohort by merely varying the complexity of the interactions.

**Issues to consider when implementing such a strategy**

1. Make the virtual pharmacy a special professional space for learning and professional identity development - so ask our students to wear their placement uniforms when they attend
2. Secure access to the virtual pharmacy so that supervision is available for authentic feedback and teaching
3. Plan a resource acquisition process to update the scenarios regularly as practice paradigms change, with expansion of professional scope and as issues change

**Feedback received regarding this strategy**

Anecdotally, students disclose that they find the virtual pharmacy allows them to suspend disbelief and really immerse themselves in the setting and the patient vignettes, whilst the model pharmacy which forms one wall of the learning space allows them to adopt professional activities such as recommendation or referral behaviours with a sense of authenticity

**Related readings and links**

The following articles provided 'ponder points' when considering whether simulation-based learning was an effective strategy, was a proven strategy in pharmacy and was feasible compared to other learning options.


