**The Virtual Tutor Project: a student-friendly guide to clinical skills**

**Abstract:**

Using a variety of different teaching methods is an important educational strategy to facilitate learning. There was a needto provide effective education to nursing and midwifery students that used current technology, and was user-friendly. The aim of the Virtual Tutor project was to enhance nursing and midwifery students’ learning of key clinical skills: inserting a female urinary catheter, adult resuscitation and priming an intravenous therapy line, using step by step videos for students’ self-directed use. Three ‘how to’ videos of the clinical skills were made and embedded into the undergraduate nursing and midwifery clinical subjects. Evaluative feedback was gained from students and the project team. Surveys were completed by students after they had used one or more of the videos. The results showed that the use ofthe Virtual Tutor videos were helpful in enhancing the student’s experience of learning clinical skills, and most students stated that they would access the videos again for self-directed study. The conclusion was that practical, accessible videos of how to perform common clinical skills are a useful learning tool for nursing and midwifery students.

**Keywords:** Midwifery education, nursing education, clinical skills, simulation

**Introduction**

Simulation provides an opportunity for students to be exposed to professional practice in an effective manner. It is essential however that this experience is integrated within subjects and that the technology available is well utilised. Using pre-determined scenarios in clinical simulations to prepare students in practice-based professions, such as midwifery and nursing, are an important educational strategy to facilitate learning (Gore, Hunt & Raines 2008, Cant & Cooper 2009). Clinicians respond positively to the use of simulation as a teaching strategy and there is evidence confirming that those who are involved in learning through simulation find it enjoyable, satisfying and ultimately learn from it (Gore, Hunt & Raines 2008; Jeffries & Rizzolo 2006, Mould, White & Gallagher 2011; Smith et al. 2012).

The use of multimedia is useful and effective in teaching nursing and midwifery skills (Everett & Wright, 2012; Guhde, 2010; Kelly et al, 2009). An evaluation by Everett & Wright (2012) showed that the use of videos engaged students and enhanced learning experiences. Varied methods of teaching were valued by students, and this included the use of videos in this study. Similarly Guhde (2010) evaluated student reflections and levels of learning after the use of videos in relation to patient assessment skills. This study found that, combining discussion with viewing videos was successful in stimulating the students’ critical thinking and improvements in clinical skills. A more ‘blended’ approach to the use of videos was concluded by Kelly et al. (2009). These authors found that videos (and an E-learning package) were successful when used to complement, and not replace, the demonstration of skills by lecturers.

Traditionally, nursing and midwifery students have practice-focused subjects with time-limited tutorials held in clinical laboratories (the ‘labs’), along with facilitation from lecturers. This leads to the development of clinical skills in readiness for their hospital placements. Structured tutorials do not always provide sufficient time for each student to engage in the necessary repetitive practice to build confidence and competence, hence there is opportunity for students to organise extra, self-directed lab sessions. During these sessions, students have reported to academic staff that they have concerns they may not be practising their skills correctly when they are self or peer directed. For example, having been taught how to perform a wound dressing, students may miss vital steps when practising independently in the labs, as they cannot recognise what they are missing. Students have also indicated that when returning to university after periods away in hospital placements, they would like the opportunity to further refine their skills in the labs as a way of building on their clinical experience and further developing their expertise. In response to this, we developed The Virtual Tutor project; a set of three videos to help students learn clinical skills. This was funded by a University of Technology, Sydney (UTS) Teaching and Learning Grant, with extra funding from the Faculty of Health.

In order to choose which clinical skills to focus upon, we asked nursing and midwifery student groups which skills they thought would be beneficial to them in the form of a video. We also sourced existing online videos demonstrating clinical skills (e.g. on YouTube) prior to the project proposal. None actually modelled best practice at the Australian standard, and the equipment used was quite different to that in the University’s clinical labs (where we have standard New South Wales Health equipment). To enable full engagement by students, it was deemed important that the Virtual Tutor activities and equipment were the same in the video as in our labs. Finally, the Virtual Tutor project team, in collaboration with the students, decided to develop structured guides to learning: inserting a female indwelling urinary catheter, priming an intravenous giving set, and basic adult resuscitation (including an adaptation for pregnancy).

**Development and deployment of the Virtual Tutor**

The Virtual Tutor project funding enabled the employment of a project officer to oversee the work, write the scripts and organise filming. An experienced midwife was employed for 15 hours work on this project. The development of the script, by the project officer occurred with input from all team members. Best practice regarding the clinical skills was ensured through familiarisation with current evidence, and collaboration with the team. The employment of the project officer proved invaluable to ensure coordination of team members, as well as enabling a collaborative approach to the script content, and ensuring best practice.

We used different methods of filming. One video was professionally filmed, edited and produced by an external film company and the other two were made utilising the skills of one of the project team members and the Simulation Technical Officer within the Faculty. Costs were further minimised by utilising ‘actors’ who were nursing and midwifery lecturers and other members of the Virtual Tutor team. No professional actors were used, and team members were willing participants. The scenes were common clinical scenarios, so the dialogue in the script was not unfamiliar to the lecturers; some had over 20 years clinical experience. There was an element of ‘ad lib’ allowed at the time of filming, as long as it contributed to the meaning and objective of the scene. Support for clinical equipment was given by the Technical Officer in the labs.

The Faculty of Health at UTS opened state-of-the-art clinical practice labs in their city campus in 2011. These have provided excellent opportunities for nursing and midwifery students to practice clinical skills using simulation in a safe environment. Students were given free access to the videos via a shared University website known as ‘UTSOnline’. This online portal for communication and information for students at UTS was also used in-class. Students were encouraged to watch the videos whilst accessing the clinical laboratories in non-facilitated time. Nursing and Midwifery lecturers ensured the links to the videos were accessible and introduced students to the Virtual Tutor series at the beginning of each semester.

**Evaluation strategies**

The Virtual Tutor project was evaluated both from the perspective of the students and the project team involved in making the videos. The students completed a two-question evaluation form at the end of a laboratory session after viewing one or more of the videos. This evaluation did not require ethical clearance and consent was implied by student participation (NHMRC, 2013).

Whilst making the Virtual Tutor project, we endeavoured to undertake a process of concurrent evaluation to be able to inform further projects. Notes were taken by the project officer on the best way to film the scenarios and the most efficient way to organise, film, edit and produce the videos. The project team were asked to consider their contribution to making the videos and provide feedback regarding their experience.

The student evaluation of the Virtual Tutor project videos was undertaken by the completion of a two-question form. The students were given the opportunity to state if the videos assisted them in learning the three clinical skills. Students were asked to state on a scale of 1-5 how helpful the videos were to their learning (1 - not helpful at all, 2 – a little helpful, 3 – helpful, 4 – quite helpful and 5 - very helpful), and a yes/ no response was asked of the question of whether they would access the videos again.

**Results**

***Project team evaluation***

Upon canvassing opinion and reflection from the team members, comments included ‘It was especially nice to work collegially in this manner, as we all had a common goal to achieve in developing a teaching resource for our students’; and ‘scripts were well researched and well written’. Comments were also given from team members about the desire to expand the series, use professional film crews and expand the videos to other related skills (for example, video instructions for the defibrillator to be embedded into the Adult Resuscitation video). Other comments included those related to time management, in particular the need to schedule adequate time when filming.

***Student evaluation***

Overall, the evaluations from a cross section of 115 first and second year midwifery and nursing students were positive (see Table 1). Most students rated the videos as quite or very helpful.

*Put in Table 1 here*

The evaluation forms also asked whether the students would access the video again outside of class (for example, either privately at home or within a self-directed learning group in the labs). For the catheterisation and resuscitation videos, most students replied that they would access these videos again. The students were divided on whether they would access the priming an intravenous line video again, with close to a 50:50 response as to whether they would and would not. Some students noted on the evaluation forms their reasons (which were unsolicited); one stated that she was able to get ‘real experience in her clinical placement’, and another stated ‘the [priming an intravenous line] video was very clear, easy to follow and I was able to adopt the steps in class’. Comments about the resuscitation video included ‘it was very helpful and presented in a clear and easy to understand manner’, ‘it will help me to remember what to do’, ‘it has stuck in my head’ and its use ‘made me feel more prepared and less fearful of emergency situations’. Other comments about the catheterisation video included ‘because there can be limited class time, the video is a good substitute’, and ‘it was very helpful for revision prior to the OSCE[[1]](#footnote-1) ’. One student who rated the video as ‘not at all helpful’ explained that this was because she had attended many resuscitation workshops before.

*Put in Table 2 here*

**Discussion**

The Virtual Tutor project developed three videos of clinical skills to aid nursing and midwifery students both in class, and during self-directed practice. The limitations of the project are that the data were not synthesised to determine how many students accessed the videos within their self-directed study at home or at university; only their intentions of further use were ascertained. Future research will detect more detailed use of the videos, including whether the perceived usefulness was higher when students viewed the videos at university (as opposed to home), and whether numbers of students participating in self-directed learning increased after the introduction of the videos.

In addition to learning vital clinical skills, the Virtual Tutor project encouraged student collaboration and group work, which was part of a strategy to enhance student retention (Zepke, 2013). It also enhanced the implementation of the University of Technology, Sydney (UTS) model of learning. This model involves ensuring students have multifaceted modes of practice-oriented education and an integrated exposure to professional practice. This was congruent with a constructivist model of learning where students can build on their knowledge and understanding from active engagement. In addition, students were more likely to build confidence and competence in the acquisition of clinical skills when they actively participate in learning. The project also may have increased student’s awareness and accessibility in utilising self-directed learning opportunities in the clinical laboratories.

**Conclusion**

The Virtual Tutor project was a project developed from a Teaching and Learning grant at UTS, and funding from the Faculty of Health, UTS. It aimed to assist with immersion and engagement in learning in the laboratories by developing a guide for students to ensure they were practising clinical skills correctly. This small project was helpful in enhancing the student’s experience of learning clinical skills which may have enhanced their clinical placement experience.

**Conflict of Interest statement**

All authors declare no conflicts of interests.

**Key points**

1 Nursing and midwifery students benefit from adequate practice of clinical skills within a simulated environment. After learning clinical skills during lecturer-facilitated labs, students are given the option of self-directed practice;

2 Self-directed practise of clinical skills with the use of the Virtual Tutor project videos can help to increase students’ confidence in performing these skills

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