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Using a simulated environment to support students learning clinical skills

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ABSTRACT

Within intellectual disability nursing students are prepared within a biopsychosocialeducational model and curriculum address these challenges. Using a simulated learning environment has great potential for promoting competence and in-depth knowledge of substantive topics relevant to practice. This article presents an assignment designed to more closely resemble real–world activities to allow students develop and exercise skills that translate to practice activities and incorporates a student's reflective comments on the process. The assignment was designed to foster intellectual disability student nurses ability to facilitate family/client education. The aim of the assignment was fulfilled through the students designing a clinical skill teaching session that could be used with families/clients. The sessions were recorded and the student reviewed their recording to reflect on their performance and to self assess. To facilitate student learning the modules academic lecturer also reviewed the recording and both lecturer and student meet to discuss the reflection and self assessment.

Introduction

Ireland has seen much change in nurse education resulting in a four year degree programmes since 2002 comprising of both theoretical (72 weeks) and clinical (74 weeks) components (Deasy et al., 2011). Within intellectual disability nursing students are prepared within a biopsychosocialeducational model (Doody and Doody, 2012) and nurse education curriculum strives to address these challenges. However nurse education takes place against a backdrop of a complex and every changing healthcare environment, thus curriculums need to be responsive and foster new ways of supporting student education. Depending on the chosen pedagogical approach many educational instructors can enrich the classroom environment, student learning, meta-cognition and critical thinking (Jensen et al., 2009). With this in mind and to prepare intellectual disability nursing students for a complex, dynamic healthcare environment, the faculty member designed an assignment incorporating the use of a simulated learning environment, video recording and analysis, reflection and self-assessment. The assessment was specific to a module on the multiple and complex health needs of individuals with intellectual disability and involved the students designing and delivering a teaching session appropriate to use with a family of a person with intellectual disability regarding a specific clinical skill. The student cohort ($n = 30$) were divided into two clinical skill lab groups with 15 per group. The skills associated with the module were listed and a lottery system was employed to allocate each student a clinical skill that they would deliver as a teaching session at the end of the module. The challenge was to engage students in; the clinical skill and develop their skills of working with families and clients with a disability. This is in line with the Irish professional nursing bodies regulations for registration (An Bord Altranais, 2005) requiring education programmes to enable students to develop skills of analysis, critical thinking, problem solving and reflection. The necessitate for these skills are emphasised within an intellectual disability nurses daily work as they are required to think critically, provide effective care that supports both client and family in a manner that empowers them to take control over their own health. The module was completed at the end of the students' second academic year. This article presents the use of simulated environments, video analysis, reflection and self-assessment with a module as an educational method within an undergraduate module and incorporating a student's (co-author) reflective comments on the module and its process.

Applying the use of simulation within the current context

Traditionally practical skills have been taught using face-to-face methods such as lectures, live demonstrations, group work and tutorials (Grimshaw et al., 2001). During the session the instructor demonstrates the skill and feedback is given as students practice

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the skill. This traditional approach creates a number of limitations such as the time-constraints associated with adhering to room booking schedules, students access to feedback and the equity of the feedback provided (Archer, 2010). In addition it denies the student the opportunity to be an observer where they view their performance as which can occur if students view a video playback of their performance. This is a valuable learning opportunity as it enables the student to focus on potential deficits in their verbal and non-verbal communication (Noordman et al., 2011). With technological advances and increased accessibility to such technologies, it has facilitated innovative teaching methods which have the potential to overcome the limitations of traditional approaches (Jennings and Cashman, 2008). As traditionally all too often skills were left to be picked up on an ad hoc basis by students while in clinical practice. This trusting to chance, reinforces what simulation can offer us in that we can have a certainty that students have attempted and/or are assessed at doing.

University education should incorporate multimedia with which students are familiar to assist their learning of practical skills (Oblinger, 2006; Coffee and Hillier, 2008). Incorporating the use of multimedia and utilising students increased awareness of multimedia technologies creates an opportunity to overcome the limitations of instructor observation and feedback on student performance and facilitates the student to reflection on their own performance (Noordman et al., 2011). The ability to reflect on ones own performance is an effective strategy for life-long learning and an essential characteristic of professional behaviour (Shepard and Jensen, 2002; Maloney et al., 2012). However, the link between reflection and the enhancement of clinical skill performance remains speculative and abstract (Donaghy and Morss, 2007). While on the other hand one reason for a poor link with performance is related to the inaccurate perception of the learner regarding their performance (Maloney et al., 2012). Whereas the use of a video recording of the task provides students with repeated opportunities to view their performance, fosters ones skills in self-evaluation and supports tutor feedback (Boyer et al., 2009).

Due to the complex healthcare arena and the wide range of roles and responsibilities facing newly qualified nurses, nurse educators are required to prepare graduates to deliver safe effective healthcare ready for practice (Billett, 2009; Smith et al., 2009). To ensure this educators continually search for innovative teaching strategies to optimise clinical learning in an evolving healthcare system (Elfrink et al., 2010). Educational approaches to teaching and learning must be responsive to these changes (Brooks et al., 2010) and a business as usual approach is not an adequate response (Benner et al., 2009; Glasgow et al., 2010). One of these responses has led to the increasing use in simulation based education (Akhtar-Danesh et al., 2009). Simulation has behavioural and constructivist origins (Parker and Myrick, 2009). Where behaviourists focus on skill acquisition and constructivists focus on the development of higher order thinking, non-technical skills and clinical judgment (Walder and Olson, 2007). In the last 10 years simulation-based healthcare education has undergo unexpected expansion (Issenberg, 2006). The integration of simulation is seen as a paradigm change and an area flourishing as a hot topic in nurse education with research opportunities (Seropian et al., 2004; Nehring, 2008; Jeffries et al., 2009; Harder, 2010).

Simulation techniques are recognised as a valid method of education (Cant and Cooper, 2010) with positive effects on knowledge acquisition and/or skills training (Ravert, 2002). Simulation in the majority of the studies increased students' clinical skills. However, some studies indicate no difference between traditional teaching modalities and simulation, although no studies identify a decrease in the simulation group (Harder, 2010). On the other hand Lapkin et al. (2010) identifies that the use of simulation significantly improves learning outcomes fundamental to clinical reasoning (i.e., knowledge acquisition, critical thinking, ability to identify deteriorating patients). While McCaughey and Traynor (2010) highlight that simulation experiences prepared students for the transition from student to qualified nurse as their confidence was enhanced. While acknowledging the evidence supporting the use of simulation to facilitate the transfer of knowledge to performance is in its infancy, it is the actual, rather than perceived, impact of simulation on placement performance that is yet to be established (Baillie and Curzio, 2009). Consequently the degree to which skills acquired during simulation transfer to practice is often supported only by anecdotal evidences (Alinier et al., 2006). With few studies demonstrating the transfer of simulation-based learning into the clinical environment and its effect on clinical practice (Flanagan et al., 2007; Murray et al., 2008).

Simulation as an educational strategy, allows students develop, refine and apply their knowledge and skills in a safe environment (Jeffries, 2005). Simulation improves cognitive and psychomotor skills (Alinier et al., 2006) communication and teamwork (Beaubien and Baker, 2004; Shapiro et al., 2004), self-efficacy and confidence (Nunn, 2004) and critical thinking (Distler, 2007). In addition the use of simulation and role play are seen as effective strategies that support students to become competent in clinical or technical skills (Harder, 2010; Shepherd, 2010). Through constructive, highly participatory and realistic tuition that is performed in realistic working environments and thereby students can apply these skills in their practice (Wilford and Doyle, 2006). It is acknowledged that the non-technical skills of cognitive and social skills are essential elements that complement ones technical skills (Flin et al., 2008). These elements have been identified as decision making, teamwork, situation awareness, communication, managing stress, leadership, and coping with fatigue and are the behavioural aspects required to ensure the delivery of safe effective care (Flin et al., 2008). Assessment involving simulation help overcome these challenges, enhancing students competence and through learning environments that are interactive and mirror the real clinical situation (Arundell and Cioffi, 2005). The introduction of simulation does not however replace the need for clinical practice and learning in the real life situation, but does complement student learning in order to prepare them for their role and ensure quality of patient care (Maran and Glavin, 2003). Self-reflection of their own performance is an effective method of learning clinical skills. Students reflecting on their skills by reviewing the videotapes improves students' learning motivation and competency as reflecting on, and being critical of, ones own performances help students internalise information related to the procedure (Levett-Jones et al., 2007; Woolley and Jarvis, 2007).

Constructive feedback assists students to understand the positive and negative elements of their behaviours and performance, thereby facilitating students to modify their future actions (McKenne at al., 2011). The use of video feedback, where students are recorded and then watch the playback with an instructor, enhances feedback and allows the student view their own behaviours from a different perspective and improves the feedback process (Fanning and Gaba, 2007; Brimble, 2008). Where feedback is provided in combination with watching video-recordings it improves clinical skills (Brimble, 2008), increases patient dialogue, expression of empathy (Roter et al., 2004) and improved technique (Hauer et al., 2007). Feedback from an instructor while watching a video-recording with a student is more effective than watching video playback alone (Srinivasan et al., 2007). While self-reflection is a valuable tool, a student watching a video alone may be inadequate to improve self-assessment (Srinivasan et al., 2007). However through receiving feedback from an instructor as well as watching the video playback themselves, the reflective process is enhanced