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Featured Article

# Student Nurse Perceptions Regarding Learning Transfer Following High-Fidelity Simulation

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## KEYWORDS

nursing education;  
high-fidelity simulation;  
simulation learning;  
transfer of learning;  
experiential learning

## Abstract

**Background:** Little is known about the effectiveness of students' transfer of simulation learning to "real-world" contexts. This study was an initial exploration of third-year nursing students' perceptions regarding the transfer of high-fidelity simulation learning to clinical practice.

**Method:** A series of semistructured focus group discussions were undertaken with final year undergraduate nursing students (n = 25).

**Result:** Three themes emerged from the analysis of data: But it's not the same on "real" clinical practice, Having opportunities to apply what we've learned, and Making better connections.

**Conclusions:** The findings highlight that transfer of simulation learning to practice should not be assumed, particularly when students' clinical placements are in settings that are dissimilar to the high-fidelity simulation scenarios they have experienced.

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The use of high-fidelity simulation (HFS) has quickly gained prominence as a key teaching and learning strategy in many health professions, including nursing. HFS refers to simulation experiences that are "extremely realistic and provide a high level of interactivity and realism for the learner... it can apply to any mode or method of simulation including human, manikin, task trainer, or virtual reality" (Lopreiato et al., 2016, p. 14). In this study, a full-body, fully computerised manikin was used to create the simulation

experience for students. A growing body of literature reports a range of learning outcomes gained through HFS (e.g., Bambini, Washburn, & Perkins, 2009; Boet et al., 2014; Gegenfurtner, Veermans, & Vauras, 2013; Kaddoura, 2010). Although it may be assumed that students will transfer what they have learned in an HFS context to the real world of clinical practice, relatively little is known about the nature of such transfer, particularly in relation to complex cognitive processes such as clinical reasoning, clinical judgement, ethical decision making, etc. The question of what facilitates transfer of learning from practice settings to the workplace is not new. However, with the rise of

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HFS as a key learning and teaching strategy in health professional education, the “transfer problem,” as described in Baldwin and Ford’s seminal work (1988, p. 63), has become an important question in this context.

### Key Points

- With the rise of high-fidelity simulation in nursing education, transfer of learning has become an increasingly important issue.
- Third-year nursing students perceived a disconnect between simulation in the university context and clinical practice in the “real world.”
- Factors that influence transfer of simulation learning are identified.

## Background

### Transfer of Learning

Transfer of learning can be described as “the learning process involved when a person learns to use previously acquired knowledge/skills/competence/expertise in a new situation” (Eraut, 2004, p. 212). When the situation is very similar to what has been previously experienced, the transfer process can be relatively straightforward. But when the new situation is less familiar and possibly more complicated, transfer becomes a more challenging

process that typically involves five interrelated stages (Eraut, 2004) (see Table 1).

Salomon and Perkins have elaborated the low/high-road theory of transfer of learning (1989). Low-road transfer occurs when stimulus conditions in the transfer context are sufficiently similar to those in a prior context of learning to trigger well developed semiautomatic responses, for example, when the student carries out a standard procedure with which he/she is already familiar. On the other hand, high-road transfer depends on mindful abstraction from the context of learning and a deliberate search for connections, for example, What is the general pattern? What is needed here? What principles might apply? What is known that might help? Such transfer is generally not reflexive and requires mental effort to be accomplished (Perkins & Salomon, 1992, p. 7). Salomon and Perkins also distinguish between “forward-reaching” and “backward-reaching” transfer (1989, p. 126). Forward-reaching transfer refers to the process of learning basic concepts for future application, whereas backward-reaching transfer refers to the process of searching back for knowledge that is relevant to a present problem, for example, a clinical reasoning task (Bolander-Laksov, Lonka, & Josephson, 2008). Given the highly complex nature of health environments in which clinical placements occur, it is not difficult to appreciate the challenges posed for students in terms of making meaningful connections between simulations experienced at university and the application of what they have learned across diverse and unpredictable workplace contexts. Hence, the

purpose of this study was to undertake an initial exploration of the transfer of simulation learning to the practice context from the perspective of undergraduate nursing students.

## Methods

As little is known about the perceptions of students regarding their transfer of simulation learning to clinical practice, a descriptive qualitative research design using focus group methodology was used in this study.

### Setting

The study was undertaken in a large Australian School of Nursing that offers a three-year Bachelor of Nursing course that includes HFS as a core component of the undergraduate nursing curriculum. The HFS learning activities in this study were undertaken utilising Laerdal’s 3G SimMan™ that is a full-body manikin with embedded software that can be remotely controlled by a computer (located in a separate control room in this setting) to facilitate programmed scenarios that allow the operator to set physiological parameters and respond to learners’ actions with changes in voice, heart rate, blood pressure, oxygen saturation, and other physiological indicators. The manikin was located in a single bed room that authentically resembles a standard hospital room similar to those found in all major hospitals in Brisbane.

### Sample

Following approval by the University’s Ethics Committee, final year Bachelor of Nursing students who had completed an HFS session that is part of the standard Semester 1, Year 3 clinical course requirements, and who were currently undertaking the clinical practicum that followed, were informed about the study by e-mail and invited to participate. An information statement was provided, and students were asked to sign a consent form prior to participating. A total of 25 students participated in the focus group discussions that were conducted in the large metropolitan hospital in which students were undertaking their clinical practicums. All student participants had followed a standard course progression and, at the time of the study, had completed approximately 65% of their total clinical hours. Student participation in the study was voluntary, but all students were required to participate in the clinical course. There were no differences in clinical performance between student participants in the study compared with the student cohort as a whole.

### HFS Experience

The HFS session was undertaken by allocating the student cohort into groups of eight students and, for each group,

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