Corresponding Author: Ms Suzanne Rochester,

Corresponding Author's Institution: UTS

First Author: Suzanne Rochester

Order of Authors: Suzanne Rochester; Michelle A Kelly, RN, BSc (Macquarie), MN (UTS); Rebecca Disler, PDAP(UMel), BSc(UMel), BN(Latrobe), MSc(Research) ; Haidee White, BN (UoN), PGCertnurs (UoN), MN(AdvPrac)(UoN); Jan Forber, B.Sc (Liverpool, UK), MSc (Brighton, UK); Sonia Matiuk , BN (UTS), GradCertNeuro (UTS), MN (UTS)

Abstract: To provide each student within a large cohort the opportunity to participate in a small group simulation that meets recognised quality indicators is a challenge for Bachelor of Nursing programs in Australia. This paper, as part of a larger longitudinal study, describes one approach used to manage a simulation for 375 1st year nursing students and to report on the quality of the experience from the student's perspective. To ensure quality was maintained within the large cohort, aspects of the simulation were assessed against the following indicators: alignment with curriculum pedagogy and goals; preparation of students and staff; fidelity; and debriefing. Data obtained from a student focus group were analysed in the context of the quality indicators. The following themes emerged from the data: knowing what to expect; assuming roles for the simulation; authenticity and thinking on your feet; feeling the RN role; and, preparation for clinical practice. This paper demonstrates it is possible to provide students in large cohorts with active participatory roles in simulations whilst maintaining quality indicators.

Title: Providing simulation experiences for large cohorts of novice student nurses: evaluating quality

and impact

Suzanne Rochester
Senior Lecturer, Director of Nursing Studies (Undergraduate)
Faculty of Nursing, Midwifery and Health,
University of Technology, Sydney
RN, RM, BA (Macquarie), MA Psych (Syd), MN (Honors)(UTS)
Email: Suzanne.Rochester@uts.edu.au
Phone: +61 2 9514 5154
Fax: +61 2 9514 5049

Mailing address: PO Box 222, Lindfield NSW 2070 Australia

Michelle Kelly
Lecturer, Director of Simulation and Technologies
Faculty of Nursing, Midwifery and Health,
University of Technology, Sydney
RN, BSc (Macquarie), MN (UTS)

Rebecca Disler
Lecturer, Faculty of Nursing, Midwifery and Health,
University of Technology, Sydney
PDAP(UMel), BSc(UMel), BN(Latrobe), MSc(Research) (KCL)

Haidee White
Lecturer, Faculty of Nursing, Midwifery and Health,
University of Technology, Sydney
BN (UoN), PGCertnurs (UoN), MN(AdvPrac)(UoN)

Jan Forber
Lecturer, Faculty of Nursing, Midwifery and Health
Academic Administrator - Clinical Adviser
Director of Simulation and Technologies (acting)
University of Technology, Sydney
B.Sc (Liverpool, UK), MSc (Brighton, UK)

Sonia Matiuk
Lecturer, Faculty of Nursing, Midwifery and Health
University of Technology, Sydney
BN (UTS), GradCertNeuro (UTS), MN (UTS)

Word count 4,303 without reference list and abstract

*Detailed Response to Reviewers

Responses to reviewers' comments

Reviewer #1:	
Relevance This paper addresses the issues of using simulation in nursing education, which is relevant to the current educational practice of nursing profession. It is however, cursory and even superficial in its treatment of the subject.	The focus of the paper has been narrowed to address logistics of providing simulations for large cohorts and assessing the quality from students' perspectives.
AUTHENTICITY The paper lacks the evidence of critical review of current literature relevant to the research. There is ample literature available demonstrating the use of simulation in nursing education, particularly in undergraduate nursing curricula. A highlighting of the significance of this study through a critical review of other literature needs to be undertaken. Also, there should have been more research into immersive simulation and the design of simulation sessions. The paper doesn't even include a definition of 'immersive simulation' or address its implications. In fact, students are given prescribed (though self-selected) roles and watch a DVD (academics playing the roles) prior to the simulation session, which would have hindered students' immersion into the practice situation. There is no information about the debriefing which is an integral part of any immersive simulation. Use of a learning theory or pedagogical framework should be encouraged. However, this paper does not acknowledge other literature-utilised learning theory to develop and guide simulation practice. A number of recently published articles have demonstrated using the same or similar theories to guide simulation. A few minor editing mistakes found in the reference list, e.g., use of capital letters after colon (:), tab spacing (p. 19).	Focus of the paper has changed – see above. Further relevant literature has been included in the background section. The notion of immersive simulation has been modified to just simulation. Further descriptions or detail about the immersive nature and what that means have been put aside for another paper. Justification of strategies used for 1st year student simulations have been clarified. More information about the debriefing has been included. Examination and alignment of simulation to learning theories has been removed from this paper as the focus has changed. Another future paper will examine links of simulation to relevant learning theories in greater detail. There is reference however to the pedagogical frameworks within the renewed BN curricula and integrated simulation activities throughout the program. Editing issues addressed.
LOGIC The logical flow of this paper needs to be improved significantly. As it forms 'part of a larger research project' it would be nice to see the present findings contextualised a little within the larger project. It is perhaps this peripheral nature of these results that lead to the paper seeming somewhat thin. Background The background of this paper seems to be a mix of introduction, literature review, an introduction of the learning theory (which should have been used as a framework guiding the development and practice of simulation) and a part of method. Clear sub-headings to guide the readers need to be used. The aim and the	The larger research project has been brought forward in the paper and expanded. The paper emphasises the integral nature of the focus group to the quality assessment of the simulation. Format of the paper has been revised to improve flow. Subheadings and research aims have been addressed as recommended.

structure of this paper should have been presented in the first one or two paragraphs to inform the readers what this paper is about.	
Methods	
The arrangement of a simulation week (the immersive simulation experience) can be included within the heading of Methods. Alternatively, it can be placed under a separate heading, such as Context.	Details of the simulation week addressed
Under the heading "the immersive simulation experience", the use of DVD needs to be explained more fully since it is mentioned by the participants in the results.	More information about the DVD has been included.
Design	
It seems unreasonable to exclude simulation teaching staff from the process of developing the focus group interview questions; should not the main staff have been formulating the interview questions so that right questions were to be asked? It is reasonable, though, to exclude the teaching staff from the interview process.	This aspect has been clarified in the paper.
Sample	
It was unclear whether the 12 participants represented the demographics of the whole population. It seems that all 12 students participated in a single interview. Twelve students in a focus group can be too crowded, which can hinder equal participation and the free expression of opinions. Nothing is mentioned of such limitations.	Further details and constraints about the focus group sample have been detailed in the paper.
Results	
Themes - some of the writings under each theme were not quite relevant to the identified theme. More concise and relevant writing to support each theme needs to be done.	Content of the themes has been further reviewed and refined to align with theme headings. Two headings have been subsumed into one for greater clarify.
Discussion	
Some of the texts from the first paragraph need to be re-located to the results. Although there is a section detailing and explaining the learning theory, it is hard to see how the theory has guided the development and practice of the simulation session. Apart from student participation, there seems to be no clear link between the simulation practice and the learning theory explained in the paper. This paper will need to include the discussion on the logistics of managing a large cohort within the limited time frame. Integrating simulation into nursing curricula should be more than adding an ad-hoc simulation week to the teaching schedule. There needs to be more details on how simulation has been linked to the contents of the subject to maximise students' learning experience.	Discussion section amended in line with the change of focus for the paper. Issues listed here have been addressed. Learning theory is now more logical to the paper. The integration of simulation through a whole curriculum view (as intended) is more clearly expressed in the paper.

Limitations It is difficult to countenance that the limitations of the study are themselves limited to the couple of issues mentioned in this too-brief section. As previously mentioned, there are inherent limitations in the focus group methodology that may have been cogent to the project but were not explored. Conclusion Conclusion is too short and does not address the key issues of this paper, such as they are. I am not convinced that this paper supports the development of clinical judgement in simulation.	Recognition of the issues raised by the reviewer: changes made to the limitations section. Also, areas for further research have been added. Conclusion changed in line with the change of focus for the paper.
CLARITY Since the paper's ostensible aim is to 'describe one approach to immersive simulations' it is difficult to find the author's intended argument. Linking statements between the paragraphs and the use of topic sentences (and/or summary statements) in each paragraph will help readers to follow the argument such as there is. More precise, concise, direct and academic writing style needs to be employed. The argument seems to be the final sentence of the first paragraph: "It would appear that a combination of experiential learning, that is, learning in the clinical setting and the simulation laboratory, is an increasingly essential element of contemporary nursing education." While this appears fine at first glance, there is some simplification and conflation happening in this statement that possibly betrays a deficient understanding of the pedagogical background to simulation. 'a combination of experiential learning' [. a combination of experiential learning techniques, surely.] 'that is, learning in the clinical setting and the simulation laboratory [. there is the implication of an equivalence here that pays no heed to the broad field of experiential learning and the multiplicity of techniques that could be employed in just these two settings alone.] 'is an increasingly essential' [. you can't get 'more essential' than 'essential'. you either are or you aren't.]. There is much similar vagueness throughout. A few grammatical errors are found, and a lack of commas on occasion requires the reader to back up and re-read to avoid confusion.	Issues raised here have been addressed with a change of focus for the paper. Grammatical issues have been addressed.
ORIGINALITY Ample literature reporting the practice of simulation in undergraduate nursing education already exists. What could have been new ground for this paper, such as a large cohort simulation and the use of learning theory, were not clearly demonstrated in the paper.	We have changed the focus of the paper to large cohort simulations and removed learning theories – for another paper. We believe the new focus adds original contribution to the literature.
SCHOLARLY APPROACH There is a degree of scholarly approach in this paper. However, a critical review of recent literature, and the comparing and linking of	Literature review boosted – and in line with a change of focus.

it to the current practice of simulation needs to be improved. Additionally the language in which the paper is couched needs to be more rigorously attentive to academic conventions and precision of meaning.	Expression reviewed and amended.
RESEARCH METHOD The focus group interview is one of the most effective ways of receiving feedback from participants. However, the size of sample here seems relatively small considering the cohort of over 400. Focus group interviews are particularly useful as they allows interactions among participants (Morgan & Kruger, 1993). Since only a single interview (for all 12 participants) is conducted (and, again, that no details on the debriefing process are given) there needs to be explanation about how it was facilitated to allow each participant the opportunity to clarify or qualify their agreement with the ideas as they were discussed. As this is a part of a larger project perhaps it would be best for the authors to return to that project and tease out some more of the links to the wider methodological and theoretical those underpin it to the present work.	Thank you for highlighting issues around focus group interviews. Further context around the group numbers and limited representativeness have been included in the paper. The final student cohort number was 375. The key point of conducting the focus group at the time was capturing students' opinions subsequent to the simulation and clinical practicum, and before they completed semester classes. Facilitation of the focus group to ensure participant contribution has been addressed.
Reviewer #2:	
1) The title of manuscript requires development. It addresses two areas. That is, large cohort / small group immersive simulation and beginning nursing student responses aligned with learning theory. I question if either of these is well represented in the body of the manuscript. The focus group questions do not appear to address the group experience. While interviews may have gathered information about this, where this sits in relation to theory and or implications of large group is not clear.	Thank you for highlighting this. The focus of the paper has been streamlined to discuss the logistics of providing simulation to large cohorts, and to examine the quality of the simulation from the students' perspective. The focus on learning theory has been removed from this paper – and will be developed within a separate paper where appropriate discussion can be achieved.
2) Refinement of the background and consistency in the use of terms (e.g. praxis, clinical, practicum) would be helpful. You also suggest that the outcomes of a number of nursing papers that evaluate the benefits of simulation fail to satisfactorily capture the richness of this experience. Are you suggesting that this paper will do this and if so - how does this focus sit with theory and large cohort/ small group experience? Using the essence of interacting components of the clinical learning situation 'people', 'tools' and' activity' may assist in providing the link needed .	As the focus of the paper has been changed, the issues raised here have been addressed in the revised manuscript. So too have the terms and format.
3) 'The study' is eluded to on page four - yet the details about this are not provided until page 6. I found myself wanting to know more about the study, methods etc earlier. Also stating the research question would be helpful.	More details about the larger project have been included and placed earlier in the paper. The research question for this paper has been made clearer.
4) The results require clarification. 50% of participants are noted to have had no previous nursing experience. Of those who did (one assumes 50%) 4 are noted. From the participant numbers n=12 this was confusing. Would 50% not = 6? Further clarification and details	Information about prior nursing experience has been clarified – 2 participants did not provide information. Themes have been somewhat edited and

are needed in this section. The main body of results (themes) provide some excellent insights. How these relate to addressing the title is not clear. Also not having an indication of what the research question was makes it difficult to judge the significance.	illustrations have been better aligned with relevant theme. For some points, there is overlap between themes. The research question has been made clearer.
5) The discussion reads more like a conclusion. Exploring the relationship of the findings and how this sits in relation to the literature and how this research extends knowledge would be helpful.	Discussion amended in line with the change in focus of the paper.

 Background

The rapid uptake of simulation in undergraduate nursing curricula illustrates the value of simulation as a teaching strategy, its benefit in preparing students for clinical practice and the increasing need to supplement the practicum experience through simulation (Hope, Garside, & Prescott, 2011; Sears, Goldsworthy, & Goodman, 2010). Simulation encounters can provide authentic and focused learning experiences for students in a controlled environment (McCaughey & Traynor, 2010; Melnyk, 2008; Ricketts, 2011). Where authenticity is high, both in a technical and psychological sense, simulation mimics practice situations and provides opportunities to enact, reflect and develop nursing roles in synergy with actual practice experiences (Berragan, 2011; Mooney, 2007). Providing quality simulation experiences is increasingly important in environments where clinical placements are difficult to acquire and where the range of patient care experiences are limited or variable.

The benefits of simulation as a strategy for teaching and learning are well documented. Benefits include the ability to: combine key technical and non-technical skills in a learner-centred and student active way (Kneebone, Nestel, Vincent, & Darzi, 2007; Melnyk, 2008); provide a stimulus for reflecting on clinical practice (Nielsen, Stragnell, & Jester, 2007); link patient safety issues to specific health priorities (Cooper et al., 2010; Gantt & Webb-Corbett, 2010); and, provide a means of presenting patient conditions and clinical situations infrequently seen in practice (McCaughey & Traynor, 2010; Weaver, 2011).   While a number of studies encouragingly report positive effects on student confidence and knowledge (Laschinger et al., 2008; Reilly & Spratt, 2007; Ricketts, 2011; Smith & Roehrs, 2009; Wagner, Bear, & Sander, 2009) and the value and appeal of simulation to students (Fountain & Alfred, 2009), results

remain inconclusive especially with regard to impact on practice (Blum, Borglund, & Parcells, 2010; Liaw, Scherpbier, Rethans, & Klainin-Yobas, in press; Weaver, 2011). It has been suggested that research often fails to capture the richness of simulation as an engrossing and multidimensional educational experience and frequently lacks sufficient alignment to learning theory (Arthur, Kable, & Levett-Jones, 2011; Berragan, 2011; Hope et al., 2011). It is also evident that the literature does not directly address the challenge of providing quality simulation experiences for large student cohorts.

In order to explore the quality of simulation experiences planned for large student cohorts and to provide further insight into the impact of simulation on clinical practice, a large longitudinal study commenced at one university in Sydney, Australia. This paper reports on one aspect of the larger study.

Evaluating the impact of simulation in a renewed nursing curriculum

The larger study aims to evaluate multiple aspects of simulation experiences which are integrated throughout a renewed Bachelor of Nursing (BN) curriculum. This evaluation focuses on student learning and clinical practice using qualitative and quantitative student data and clinical facilitators' perspectives of students' performance in the clinical setting. The beginning phase of inquiry focuses on 1st year nursing students and targets their opinions about: simulation experiences for learning and preparation for clinical practice (pre/ post questionnaire format); the value of each component within simulation encounters for learning; and the contribution of simulation to practice following clinical practicum. Information was also sought on the quality of simulation experiences in relation to the large student cohort (n=375).

The aim of this paper is to report from a 1st year student perspective, on the quality of their simulation experience as part of a large cohort, and the impact of this experience on preparation for practice. In addition, the logistics of providing a simulation experience for a large cohort is presented in detail. Other quality indicators considered when developing this simulation are discussed.

Ensuring quality simulation experiences that meet curriculum goals

Additional challenges to quality simulation experiences are faced when planning simulation for large student cohorts, where total BN numbers exceed 1500 and 1st year enrolments often exceed 400 students. Quality indicators for simulation, such as those developed by academics from the University of Newcastle (Arthur, Kable, & Levett-Jones, 2010; Arthur et al., 2011), should be achievable irrespective of student cohort size (see Table 1). These indicators include assessment of the simulation experience in regard to: integration with curriculum pedagogies and course learning goals; technical and environmental fidelity; student and staff preparation; and the comprehensiveness of the debriefing component (Table 1). A quality check provides internal feedback for incremental development, and continual integration of simulation with course pedagogies and graduate abilities. It also serves as a quality checklist for each simulation experience as it occurs.

The importance of simulation to curriculum goals

Since 2007 simulation has been a strategic priority of the Faculty. Resourcing for infrastructure and staff development has resulted in strong interest and uptake of simulation across Faculty

programs. In 2010 a revised undergraduate nursing curriculum was implemented and simulation is now integral to all 3 years of the program. The approach to teaching and learning in this program has developed as a synthesis of enquiry-based, scenario-based and solution-focused approaches, which strongly promote active student learning (Barrett, Labhrainn, & Fallon, 2005; McAllister et al., 2006; O'Neill & More, 2008). Underlying this is the notion that situating the student within the process of learning results in higher quality outcomes than might occur through the passive study of concepts (Paige & Daley, 2009). Simulation is well aligned to these pedagogies as it motivates the student to resolve and act in increasingly complex situations across the curriculum, emphasises a patient rather than a problem focus and brings authentic case scenarios into the learning space (Barrett et al., 2005; McAllister et al., 2006; O'Neill & More, 2008). Furthermore, simulation provides a unique modality for experiential learning and evaluation and provision of feedback to students (Tanner, 2006).

Gaba (2004) sees simulation not as technology but rather as a strategy for teaching and learning. In harmony with this view and based on a review of publications related to situated cognition, Paige and Daley (2009) suggest that learning is predicated on the following concepts: thinking and learning as measures of knowledge, can only make sense within an historical context and in a particular situation; it is within Communities of Practice (CoP) that people construct meaning; and, artifacts such as language, images and technology are foundational to knowledge. In essence three interacting components make up the clinical learning situation: activity, people, and tools. By attending to these elements in simulation design, it may be possible for simulation to situate the learner in a similar way to achieve learning outcomes that support the student in 'becoming a nurse.'

The specific focus of simulation in year one of the BN, where understanding of the registered nurse (RN) role and the clinical setting is limited, is to expose students to a contextualized scenario and RN practice within an authentic environment. The student is guided through this early experience and our approach to simulation is supported by current curriculum pedagogies and other learning theory, such as situated cognition. Alignment of simulation to relevant learning theories is emerging in the literature (Berragan, 2011; Kaakinen & Arwood, 2009; Onda, in press; Paige & Daley, 2009; Sanders & Welk, 2005).

Providing simulation experiences for large groups

To accommodate a simulation experience for all year one students, course timetables were adjusted to accommodate a 'simulation week' during each semester. No regular face-to-face classes were conducted during this week. The simulation was designed to synthesise learning goals of concurrent semester courses, build on learning from the previous semester simulation, and prepare students for further simulations in the second year of their program. The 'simulation week' was scheduled after 4-5 weeks of course experience and laboratory practice, prior to clinical practicum, and therefore aimed to facilitate preparation for practice. The 'simulation week' aimed to provide opportunity, beyond clinical practice within regular tutorials, of coming together in new groups to provide care for a patient and their relatives, as would occur in clinical practice and community settings. A core group of academics planned the 'simulation week' schedules and developed the scenarios and activities, namely a skill review session followed by a small group simulation.

Achieving active participation for large student cohorts has resource implications. To assist in meeting staffing demands, casual clinical facilitators were employed. Clinical facilitators were strategically included in the 'simulation week' activities to: corroborate clinical currency of scenario content and elements of practice; lead small group, clinical skills practice sessions prior to the simulation; and, provide guidance when needed during the simulation or debriefing sessions.

During the 'simulation week' students were randomly allocated to a small group of no more than 5. The small group cycled through a hands-on skill review session (1½ hour: skill review and briefing) followed by the simulation experience (1½ hour: activity and debriefing). By using staggered starting times and 4 laboratory rooms, 5 to 6 session cycles could run per day over 4-5 days. Each day up to 100 students actively participated in a small group simulation experience.

An edited DVD showing excerpts of staff performing the simulation was created and comprised part of the student preparation. Creating the DVD was beneficial in that it: validated the simulation learning objectives, timing and content; contributed to staff development ensuring consistency of simulation experiences across all groups; and, visually presented a model of RN practice for novice nursing students.

The simulation experience

Students either self-selected or were allocated roles for the simulation and provided with the respective role outline (laminated and attached to lanyards) which listed specific tasks and

actions to prompt responses. Students worked in pairs during the simulation and were encouraged to discuss their ideas and support each other in their actions.

The simulation scenario was based on a surgical patient and student roles included: nurse/s and family member/s. Ten students were allocated to each simulation; five participated in a pre-operative activity and five in a post-operative activity, focusing on the same patient's care. When not participating students observed. An overview of the simulation and preparatory reading was available online one week prior to the simulation. Students were guided through the simulation in two ways: an academic provided the patient's verbal responses through the manikin and a clinical facilitator acted in a support role providing patient handover. The clinical facilitator then stayed within the room but peripheral to the action, to provide directive prompts during the scenario if required. Immediately following the simulation, students de-roled and the two staff members facilitated the debriefing session - scheduled for twice as long as the simulation. The academic, experienced in debriefing techniques, and clinical facilitator led discussions with pre-determined open-ended questions, again to ensure consistent experiences across all groups. Questions were linked to the simulation learning objectives and encouraged self-assessment and reflection-on-practice.

Following the simulation and subsequent to clinical practicum, researchers sought feedback from students on the quality of the simulation experience, specifically the impact on learning and contribution of the experience to understanding the RN role. Data presented in this paper is based on responses from a student focus group.

Methods

Design*:*

This is an exploratory, qualitative study using a focus group methodology. The focus group methodology enables exploration of specific concepts and interaction between participants potentially yielding extensive and rich data (Pabst, Strom, & Reiss, 2010; Redmond & Curtis, 2007). Two academics, who were part of the 1st year simulation development team but not involved with teaching students in the course, led the focus group. Semi-structured questions were developed in collaboration with other members of the simulation development team. One staff member moderated the meeting while the other made observational notes.

Ethics

Institution ethics approval was granted for this study. In accordance with ethics committee approved allowances, students were offered a $10.00 gift voucher as recompense for their participation. Written consent was obtained from each participant and the focus group discussion was audio taped.

Sample

Participants and setting:

This study is part of a larger research project evaluating simulation learning experiences for large cohorts of 1st year BN students at one Australian university. A convenience sample of 12 students drawn from two tutorial groups volunteered to participate in the focus group. Due to the constraints of class timetables, the focus group was scheduled during the last hour of the final course tutorial and subsequent to clinical practicum. Only 1 focus group was undertaken based on access to students and availability of the academics. The focus group interview took place in

one of the clinical practice laboratories at the university.   All students had experienced a simulation the previous semester, mostly as observers and undertaken forty hours of practicum in an acute care setting.

Data collection & analysis

The focus group moderator began the session by welcoming and informing students about the purpose of the session, reassuring individual anonymity and setting ground rules for respectful discussion (Krueger & Casey, 2009). After completing the consent form, participants were asked a number of questions related to the simulation experience and its impact on preparation for clinical. A variety of questioning techniques were used to encourage individual and group discussion (Redmond & Curtis, 2007).

 The focus group ran for 1 hour and twenty minutes.   The audio recording and timed observations were transcribed verbatim. Thematic analysis was undertaken independently by three researchers from the team. These researchers independently coded the data, derived themes, subsequently compared analyses and refined the emerging themes and concepts. When consensus was reached the convergent themes were confirmed by a panel of 3 expert educators experienced in simulation methods.

Results

Twelve students participated in the focus group. The majority were female (n =11, 92%) with a median age of 23 years (IQR 19, 25). Participants' highest education level was high-school completion (67%) and 50% had no previous nursing experience prior to entering the BN. Of

those who had previous nursing experience three had worked as assistants in nursing and one as a personal carer. The other 2 students did not specify their nursing experience. The focus group sample reasonably matched characteristics of the larger student cohort (87% female; median age 21 years; 58% high school completion; and 75% with no previous nursing experience).

Thematic content from focus group

The following themes emerged from analysis of the focus group data: *knowing what to expect; assuming roles for the simulation; authenticity and thinking on your feet; feeling the RN role;* and *preparation for clinical practice.* Student pseudonyms are used with relevant quotes to illustrate themes.

Knowing what to expect

All students felt more comfortable and less stressed coming to the simulation having experienced one in their previous semester. As Penny revealed she was "*...not ...as afraid to engage again... as well as knowing what to expect and what to do, how to approach it*". Students reported feeling more confident and willing to participate in the second semester simulation and this was strongly enhanced if they had an active role in the first semester simulation. Many students agreed on the need to be actively involved in the simulations with Jan noting that "*If everyone is involved you feel less vulnerable and more at ease interacting with the manikin*".

Having the scenario to read online before the simulation helped students understand what was to take place and saved time on the day. All students reported doing the pre-reading. Ken summarised "*You want to prepare because it is different to a lab class because you know you*

will need to communicate and perform, the teacher will not do all the talking". One student said

that additional background reading helped her understand the patient and context.

Assuming roles for the simulation

Some students reported benefit from the skill review session prior to the simulation, saying it

assisted in assuming their roles. Two students however, suggested that the organisation was a bit

rushed, that the clinical facilitators needed more time to explain things and they already

understood the activities from tutorial classes.

As students were randomly allocated to the simulation schedule, forming into teams for the skill

review session (and subsequent simulation) helped with team member familiarization and

planning. Lolita summarised this aspect with "*I liked how you were in your group already…. So

as you were going around to each activity, you got that whole – you know how you were with

those people and you hadn't interacted with those people before so you didn't know them.

However now because you knew the person you were with, it felt more intimate"*.

 Of all the preparation activities, watching the DVD just prior to participating in the simulation

was seen by students as extremely helpful; it gave them a visual image of their own and

interdependent roles. Furthermore, they could use the responses of the experienced nurses in the

DVD as a model for their actions in the simulation. As Kim explains "*I found it [DVD really

useful because then you can kind of picture what the equivalent [role in the video was doing and

that's all best practice."* This comment was strongly endorsed by general agreement amongst

the group. Viewing the DVD prior to the simulation appeared to make the students feel more

comfortable in their role. For those who watched the video before role selection it assisted in selecting a role they could manage.

Authenticity and thinking on your feet

The way the academic interacted with students in the simulation, by providing patient responses through the manikin, encouraged students to engage with the role and scenario. Mack states "*It's so much more real. Seriously, you speak to them [the manikins] like they are a real person*". Students reported that because the manikin responded and asked questions this added elements that really tested them. Kim recalled " … *so these questions would come out [of the manikin], and they'd batter you a bit, but then it would enhance your ability to think on your feet*".

By speaking through the manikin students felt the academic cued their thinking and actions during the simulation. Students commented that real time responses and interaction helped them to think and to remember … *it's not a checklist* and they reported it felt like being in the nursing role. Jenny stated "*It is more of a personal interaction than normal lab classes where the manikin does not respond to you*".

Students stated they liked having the patient scenario and a specific role but no actual script to follow as it brought another level of authenticity to the simulation. Lolita comments "*Because if you're just reading off a script, you're not getting much out of it, whereas if you read a scenario you're saying that I need to be in this frame of mind*".

Further, students felt the simulation activities were a better way of learning - by doing rather than sitting passively in class. As Penny summarised "*It prepares you better for the clinical setting. You feel the pressure to learn more when you cannot answer a patient's questions or find a way to respond to the patient so the patient understands and you can educate them*".

After this second simulation experience, students indicated that simulation was a supportive learning situation which could enhance their abilities to interact with patients, relatives and other staff. Some students commented that their progression in the BN gave them more skills to manage the simulation.

Feeling the RN role

Each student had a role to play in the simulation which students reported made them feel less vulnerable and more at ease interacting with the manikin. As Kim states "*I really liked the simulation because of the participation factor*". Importantly students felt they were not being judged during the simulation … *everyone's up there making the same mistakes*. This sense of comfort in the simulation was perceived despite the fact that students were in groups with peers they may not have met before.

A number of students found the RN role onerous because the RN had to answer all the patient questions. However, others commented that participating as an RN helped them understand the role and responsibilities and to prepare for clinical. Jenny commented that she felt more pressure in her simulation role as the RN than she did as a student on her first clinical because "*On clinical you always have an RN to support you. In the simulation you had to think for yourself*".

These novice students acknowledged the support the laminated "scope of role" on lanyards provided which helped them to organise their …. *thoughts and actions, like prompt cards, in a way, telling you what to do ... but it's not"* (Claire). Students found it useful to work in pairs in the simulation and commented on the importance of demonstrating leadership qualities and taking the lead to organise patient care. However, Pam felt there were too many nurses working on the patient in the simulation (4 RNs) which "*…made it a bit unrealistic but it did help me communicate with the other nurse"*. Students found it more realistic not to be with members of their class group as they felt this mirrored clinical reality.

All students reported that the debriefing was particularly useful for clarifying concepts in relation to RN practice. Students agreed that the academic who played the patient role was able to give well targeted feedback and explanations and the clinical facilitator provided additional aspects related to contemporary clinical practice.

Preparation for clinical practice

All students, with one exception, felt the simulation experience assisted in their preparation for clinical practice, particularly in knowing what to expect and how to interact with others. There was increased awareness of the knowledge required for providing meaningful responses to patient questions, as Jane explains "*it helps because I know if I go to clinical in December I would know what I should answer to my patient if she asks something"*. All students agreed that it was good to practice and review skills before clinical practicum.

There was general agreement that the clinical facilitators provided an expanded and more clinically focused perspective to the skill review and debriefing sessions because of "*how long they've been doing nursing and things like that*" (Raj). In addition, the clinical facilitators provided a connection between the simulation and clinical because "*communicating with the facilitator ... you do that on clinical*" (Kim). Students became less concerned with how they might interact and communicate with clinical facilitators during clinical practicum with Suzie saying "*you know that you can ask someone that knows more than you, that you kind of have to know how to ask*". Anecdotally, clinical facilitators also reported an increased understanding of simulation as a teaching and learning strategy and a better appreciation of student learning needs through assisting with the simulation experience.

One student commented that she gained confidence from the simulation experience in that "*I could do this on clinical sort of thing. I wasn't feeling bad about anything*" (Mack). Students mentioned elements such as getting in the mindset, teamwork and communication as particular benefits from the simulation in preparing for practice. At the end of the simulation, apart from feeling some relief that it was over, students agreed that they generally felt more confident going into clinical practice, could handle more complex situations and answer patient's questions more effectively

Students were asked if their first simulation had any impact on their first semester clinical. Some students did not think about the simulation while on clinical but another was able to demonstrate skills they learnt through simulation in a similar situation. This ability assisted her in developing

a better relationship with her RN buddy on clinical and opened up more opportunities for her. Jenny recalls "*She [the RN] started utilising me as someone who could assist them [the team]*".

Most students however, felt simulation was not in itself a replacement for clinical …. *the clinical setting is always less controlled.* Another student said that she did not get to practice the skills she had learnt in class during clinical placement and that at least the simulation gave her this opportunity.

Discussion

This paper provides an overview of a how a large cohort of 1st year nursing students were able to actively and successfully participate in small group simulation. Despite logistic and resource challenges, Faculty devised a means of rotating students through a skills review and simulation experience during a dedicated 'simulation week' prior to clinical practicum. Quality indicators as devised by Arthur et al., (2011) were evident throughout the simulation and the experience was designed with regard to curriculum pedagogies, goals and learning objectives. The simulation built on learning from the previous semester and specifically targeted the beginning stage of student development.

Staff and student preparation for simulation was a high priority. In addition to a detailed briefing, which included an overview of course objectives and stage of student learning, staff anecdotally found developing the DVD an effective and novel way to check the quality of the simulation before student involvement. Students reported feeling motivated to prepare for the simulation and all students in the focus group engaged in preparation prior to the simulation.

The DVD portraying experienced academics in excerpts of the simulation scenario had a major impact on students. Students were visually exposed to examples of practice where expert nurses modeled the scenario roles they were soon to enact. As Woolley and Jarvis (2007) suggest this is powerful in enabling students to develop a conceptual model for their role in experiential learning contexts.

The fidelity of the simulation, another quality indicator, was appropriate to stage of learning for students' becoming familiar with the RN role. Students felt the simulation was realistic and consequently reacted authentically within their roles. Random allocation of students to teams and the inclusion of clinical facilitators in the skill revision sessions and debriefing, provided students with a useful link to the clinical setting. Students who adopted an RN role reported feeling the responsibility associated with that role and suggested that this motivated their learning and the need to hone their ability to think on their feet and respond to patient cues. Interestingly, as raised by one student, this could never be achieved on clinical, as students are always under supervision and unable to respond independently. In the simulation, students appreciated the opportunity to discuss their thinking and actions with their role partner, which highlighted the importance of teamwork and leadership. Although not overt in focus group themes, the debriefing process contributed to students reflecting on their own level of practice in light of participation in the simulation, viewing the DVD and feedback from clinical facilitators and acacdemics.

Allocated roles, for the most part, were perceived as authentic to the situation and a key role was the academic as patient voice. Not only did this dispel unreality so students could engage freely

with the manikin, it allowed the academic to cue student activity. The simulation took place in nursing laboratories that mimic highly technical hospital environments replete with devices and other tools including authentic patient charts and notes, to manage the patient situation. Activity expectations where outlined on lanyards but not prescribed which enforced student decision making. This simulation experience provided a context for situated learning by attending to people, tools and activity (Paige & Daley, 2009) and in this way students felt more prepared and confident for practice.

Themes which emerged from the focus group data aligned with similar learning outcomes of studies which delivered simulation to smaller student cohorts (Alinier, Hunt, & Gordon, 2004; Bambini, Washburn, & Perkins, 2009; Blum et al., 2010). In this way, similar student outcomes, irrespective of the overall cohort size, serve as another check of the quality of simulation development and delivery for large cohorts.

Issues raised in the focus group as areas for improvement included proving a better structure and focus for the skill review session, cueing additional activities within the simulation and decreasing the number of RN roles. The latter will be particularly difficult to address when organising simulation for a large cohort but all issues raised will be considered within future planning.

Based on focus group data, the quality of the simulation experience was maintained due to strategies used for implementing simulation for a large cohort. Students willingly prepared for

the experience, were challenged in their thinking and felt better prepared for communicating with patients and interacting with a team in the clinical setting.

Limitations and areas for further research

This study was carried out in one educational institution and based on a convenience sample. Although results provide insight for further course development and simulation implementation, study outcomes may need to be contextualized for other sites. The focus group comprised 12 students which may have limited full participation by all students, despite efforts to ensure equal opportunity to respond. In future studies, at least two focus groups with smaller number of participants (4-8 students) may provide better representation of student opinion (Krueger & Casey, 2009; Redmond & Curtis, 2007). Further stages of the longitudinal study, evaluating student satisfaction and quality of simulation across the program, is underway. Formal feedback from clinical facilitators will provide another perspective on the contribution of simulation as preparation for practice and student performance in the clinical setting.

Conclusion

This paper has provided insight into the logistics used by one university to provide simulation for a large student cohort in the light of quality indicators, and examined students' perspectives of the impact of this experience. It is possible to provide all students within large cohorts the opportunity to actively participate in a simulation experience and learn in a situation that mimics practice. Future BN curricula must consider the coherency of simulation and clinical placement as essential and complimentary elements of contextual learning for students.

References

Alinier, G., Hunt, W., & Gordon, R. (2004). Determining the value of simulation in nurse education: Study design and initial results *Nurse Education in Practice, 4*, 200-207.

Arthur, C., Kable, A., & Levett-Jones, T. (2010). Quality indicators for the design and implementation of simulation experiences. from http://www.newcastle.edu.au/Resources/Projects/Nursing%20and%20Midwifery%20Projects/Clinical%20Reasoning/Quality-Indicators-for-the-Design-and-Implementation-of-Simulation-Experiences.pdf

Arthur, C., Kable, A., & Levett-Jones, T. (2011). Human Patient Simulation Manikins and Information Communication Technology Use in Australian Schools of Nursing: A Cross-Sectional Survey. *Clinical Simulation in Nursing, 7*(6), e219-e227. doi: 10.1016/j.ecns.2010.03.002

Bambini, D., Washburn, J., & Perkins, R. (2009). Outcomes of clinical simulation for novice nursing students: Communication, confidence, clinical judgment. *Nursing Education Perspectives, 30*(2), 79-82.

Barrett, T., Labhrainn, I. M., & Fallon, H. (2005). Handbook of enquiry and problem-based learning. Galway: Released under Creative Commons licence
Retrieved from http://www.nuigalway.ie/celt/pblbook.

Berragan, L. (2011). Simulation: An effective pedagogical approach for nursing? *Nurse Education Today, 31*(7), 660-663. doi: 10.1016/j.nedt.2011.01.019

Blum, C. A., Borglund, S., & Parcells, D. (2010). High-fidelity nursing simulation: impact on student self-confidence and clinical competence. *International Journal of Nursing Education Scholarship, 7*(1), 14p. doi: 10.2202/1548-923x.2035

Cooper, S., Kinsman, L., Buykx, P., McConnell-Henry, T., Endacott, R., & Scholes, J. (2010). Managing the deteriorating patient in a simulated environment: nursing students' knowledge, skill and situation awareness. *Journal of Clinical Nursing, 19*(15-16), 2309-2318. doi: 10.1111/j.1365-2702.2009.03164.x

Fountain, R., & Alfred, D. (2009). Student satisfaction with high-fidelity simulation: Does it correlate with learning styles? *Nursing Education Perspectives, 30*(2), 96.

Gantt, L., & Webb-Corbett, R. (2010). Using simulation to teach patient safety behaviors in undergraduate nursing education. *Journal of Nursing Education, 49*(1), 48. doi: 10.3928/01484834-20090918-10

Hope, A., Garside, J., & Prescott, S. (2011). Rethinking theory and practice: Pre-registration student nurses experiences of simulation teaching and learning in the acquisition of clinical skills in preparation for practice. *Nurse Education Today, 31*, 711-715. doi: 10.1016/j.nedt.2010.12.011

Kaakinen, J., & Arwood, E. (2009). Systematic Review of Nursing Simulation Literature for Use of Learning Theory. *International Journal of Nursing Education Scholarship, 6*(1), Article 16. doi: 10.2202/1548-923X.1688

Kneebone, R. L., Nestel, D., Vincent, C., & Darzi, A. (2007). Complexity, risk and simulation in learning procedural skills. *Medical Education, 41*(8), 808-814. doi: 10.1111/j.1365-2923.2007.02799.x

Krueger, R. A., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research* (4th ed.). Thousand Oaks: Sage

Laschinger, S., Medves, J., Pulling, C., McGraw, R., Waytuck, B., Harrison, M. B., & Gambeta, K. (2008). Effectiveness of simulation on health profession students' knowledge, skills, confidence and satisfaction. *International Journal of Evidence-Based Healthcare, 6*(3), 278(225).

Liaw, S. Y., Scherpbier, A., Rethans, J.-J., & Klainin-Yobas, P. (in press). Assessment for simulation learning outcomes: A comparison of knowledge and self-reported confidence with observed clinical performance. *Nurse Education Today*. doi: 10.1016/j.nedt.2011.10.006

McAllister, M., Venturato, L., Johnston, A., Rowe, J., Tower, M., & Moyle, W. (2006). Solution focused teaching: a transformative approach to teaching nursing. *International Journal of Nursing Education Scholarship, 3*(1), 23-31.

McCaughey, C. S., & Traynor, M. K. (2010). The role of simulation in nurse education. *Nurse Education Today, 30*(8), 827-832. doi: 10.1016/j.nedt.2010.03.005

Melnyk, B. M. (2008). Evidence to Support the Use of Patient Simulation to Enhance Clinical Practice Skills and Competency in Health Care Professionals and Students. *Worldviews on Evidence-Based Nursing, 5*(1), 49-52. doi: 10.1111/j.1741-6787.2008.00112.x

Mooney, M. (2007). Newly qualified Irish nurses' interpretation of their preparation and experiences of registration. *Journal of Clinical Nursing, 16*(9), 1610-1617. doi: 10.1111/j.1365-2702.2007.01691.x

Nielsen, A., Stragnell, S., & Jester, P. (2007). Guide for reflection using the clinical judgment model. *Journal of Nursing Education, 46*(11), 513-516.

O'Neill, G., & More, I. (2008). Strategies for Implementing Group Work in Large Classes: Lessons from Enquiry-Based Learning. In B. Higgs & M. McCarthy (Eds.), *EMERGING ISSUES II: The Changing Roles and Identities of Teachers and Learners in Higher Education* (pp. 75-88). Cork: National Academy for Integration of Research & Teaching & Learning (NAIRTL).

Onda, E. L. (in press). Situated cognition: It's relationship to simulation in nursing education. *Clinical Simulation in Nursing*, e1-e8. doi: 10:1016/j.ecns.2010.11.004

Pabst, M. K., Strom, J., & Reiss, P. J. (2010). Use of focus groups to elicit student perception of NCLEX-RN preparation. *Journal of Nursing Education, 49*(9), 534-537

Paige, J. B., & Daley, B. J. (2009). Situated cognition: A learning framework to support and guide high-fidelity simulation. *Clinical Simulation in Nursing, 5* (3), e97-e103. doi: 10.1016/j.ecns.2009.03.120

Redmond, R., & Curtis, E. (2007). Focus groups in nursing research. *Nurse Researcher, 14*(2), 25-37.

Reilly, A., & Spratt, C. (2007). The perceptions of undergraduate student nurses of high-fidelity simulation-based learning: A case report from the University of Tasmania. *Nurse Education Today, 27*(6), 542 - 550.

Ricketts, B. (2011). The role of simulation for learning within pre-registration nursing education - A literature review. *Nurse Education Today, 31*(7), 650–654. doi: 10.1016/j.nedt.2010.10.029

Sanders, D., & Welk, D. S. (2005). Strategies to scaffold student learning: Applying Vygotsky's zone of proximal development. *Nurse Educator, 30*(5), 203-207.

Sears, K., Goldsworthy, S., & Goodman, W. M. (2010). The relationship between simulation in nursing education and medication safety. *Journal of Nursing Education, 49*(1), 52-55. doi: 10.3928/01484834-20090918-12

Smith, S., & Roehrs, C. (2009). High-fidelity simulation: Factors correlated with nursing student satisfaction and self-confidence. *Nursing Education Perspectives, 30*(2), 74 - 78.

Wagner, D., Bear, M., & Sander, J. (2009). Turning simulation into reality: increasing student competence and confidence. *Journal of Nursing Education, 48*(8), 465-467.

Weaver, A. (2011). High-fidelity patient simulation in nursing education: An integrative review. *Nursing Education Perspectives 32*(1), 37-40.

Woolley, N. N., & Jarvis, Y. (2007). Situated cognition and cognitive apprenticeship: A model for teaching and learning clinical skills in a technologically rich and authentic learning environment. *Nurse Education Today, 27*(1), 73-79. doi: 10.1016/j.nedt.2006.02.010

Table 1 – Quality indicators statements for Simulations

Amended from Arthur et al. (2010; 2011)

Pedagogical principles	Simulation aligned with curriculum goals and course objectives Integration of simulation into each clinical course Learning objectives guide all aspects of simulation
Fidelity	Use of a range of technologies and approaches Consider environmental fidelity Contextually appropriate clinical equipment and patient information
Student preparation and orientation	Expectations addressed in line with learning objectives and prior experience Orientation - familiarization with manikins / equipment / area
Staff preparation and training	Appropriate training Staff designing and facilitating simulations are aware of curriculum & course objectives, have relevant clinical experiences & skills in debriefing. Technological capabilities – manikins / AV
Debriefing	Should be structured and immediately following the simulation Facilitate reflection on practice / self evaluation / feedback on perceptions of the experience Opportunities to discuss wider elements of clinical practice