Staff and students' perceptions and experiences of teaching and assessment in Clinical Skills Laboratories: Interview findings from a multiple case study

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SUMMARY

Background: The Clinical Skills Laboratory has become an essential structure in nurse education and several benefits of its use have been identified. However, the literature identifies the need to examine the transferability of skills learned there into the reality of practice.
Objective: This research explored the role of the Clinical Skills Laboratory in preparing nursing students for the real world of practice. This paper focuses specifically on the perceptions of the teaching and assessment strategies employed there.
Design: Qualitative multiple case study design.
Setting: Five case study sites.
Participants: Interviewees (n = 58) included academic staff, clinical staff and nursing students.
Methods: Semi-structured interviews.
Results: The Clinical Skills Laboratory can provide a pathway to practice and its authenticity is significant. Teaching strategies need to incorporate communication as well as psychomotor skills. Including audio-visual recording into assessment strategies is beneficial. Effective relationships between education institutions and clinical settings are needed to enhance the transferability of the skills learned.
Conclusions: The Clinical Skills Laboratory should provide an authentic learning environment, with the appropriate use of teaching strategies. It is crucial that effective links between educators and clinical staff are established and maintained.

Introduction

Clinical Skills Laboratories (CSLs) were developed to ensure that student nurses were receiving adequate clinical skills education. In particular, they were developed to address the potential reduction in students' exposure to clinical skills due to changes in health care and nurse education worldwide. In recent years, each Higher Education Institution (HEI) in Ireland developed a CSL for the purpose of teaching and assessing clinical skills. CSLs have, therefore, become essential components of nurse education in this country. This paper describes the findings from qualitative interviews, conducted as part of a multiple case study that explored the role of the CSL in preparing student nurses for the reality of practice.

Background

CSLs were developed internationally to respond to the recognition that provision must be made for teaching both theory and practice in nursing. The World Health Organization (1999) recommended that Nursing Schools should have appropriate resources, including CSLs, to enable the theoretical and practical delivery of nursing programmes. The literature reveals many benefits of CSLs. They have been found to be safe learning environments (Morgan, 2006; Moule et al., 2008). They also provide an opportunity to practise skills that students may not have the opportunity to practise in the clinical setting (Nursing and Midwifery Council, 2007). However, the literature emphasises that in order to ensure effective learning, the environment for teaching clinical skills needs to be realistic and authentic (Knight and Mowforth, 1998; Alinier, 2003; McCallum, 2007). A lack of authenticity in CSLs can threaten the transferability of skills learned into the reality of practice (Silverman and Wood, 2004). In addition, to enhance the transferability of skills that students learn in CSLs, there needs to be consistency between the teaching that occurs in CSLs and in the clinical setting (Kneebone et al., 2004; Silverman and Wood, 2004).

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The primary teaching and assessment strategies used in the CSL, identified in the literature, include low to high-fidelity simulators, Standardised Patients (SPs), scenario-based simulation, Objective Structured Clinical Examination (OSCE) and Audio-Visual (AV) recording. Studies indicate that many of these strategies have been positively evaluated. Simulators can be classified as low- to high-fidelity (Seropian et al., 2004; Decker et al., 2008). Task and skill trainers, such as Resusci-Anne, are the most common types of simulators used to enable students to practise specific skills and techniques (Seropian et al., 2004). However, it is considered that high-fidelity simulators, such as Laerdal™ SimMan™, produce the most realistic simulated patient experiences (Seropian et al., 2004). Research has found that the use of high-fidelity simulators was perceived positively by both educators and students as valuable learning tools (Feingold et al., 2004; Weller, 2004). They were identified as helpful in developing critical thinking, confidence and competence (Nehring and Lashley, 2002; Bearnson and Wiker, 2005; Traynor et al., 2010). However, some students found them to be unrealistic (Nehring and Lashley, 2002). Therefore, the transferability of the skills learned using simulators may be limited (Feingold et al., 2004).

The literature indicates that using SPs increases students' knowledge, clinical judgement and communication skills (Nestel et al., 2003; Hale et al., 2006). SPs were also able to give students timely feedback (Nestel et al., 2003; Becker et al., 2006). In addition, research studies suggest that the use of SPs in conjunction with scenario-based simulation has been found helpful for students in clinical decision making (Cioffi et al., 2005). Scenario-based simulation is a term to describe recreating potential clinical situations in an educational context. This form of simulation can include high-fidelity simulators, SPs and a realistic replicated environment. Scenario-based simulation was found to help assist students to apply knowledge learned in the classroom into clinical practice, thereby aiding the transferability of skills (Arundell and Cioffi, 2005).

OSCEs have also been identified as useful for student learning. Students have evaluated OSCEs positively and viewed them as beneficial (Brosnan et al., 2006; Jay, 2007). Educators also stressed the benefits of the OSCE as an assessment approach (Byrne and Smyth, 2008). The identified benefits include an increase in student confidence on successful completion of the OSCE (Alinier, 2003). Furthermore, students reported that they would practise a skill more frequently if there was an upcoming OSCE (Jay, 2007; Rushforth, 2007). However, a challenge to the use of OSCEs is that they can increase student anxiety (Kneebone et al., 2002; Brosnan et al., 2006). Furthermore, an integrative review (n = 41) by Walsh et al. (2009) found that there is a lack of evidence on the use of OSCE to measure competency in nurse education.

In addition to the use of OSCE for assessment purposes, the literature identifies the increasing use of AV recording to provide feedback about skills acquisition. In some research, students found that AV recording of their skills performance was beneficial (Henrichs et al., 2002; Kneebone et al., 2002; Yoo et al., 2009). They appreciated the opportunity to gain immediate feedback; and to reflect on their performance, in order to recognise their mistakes (Henrichs et al., 2002; Kneebone et al., 2002). Furthermore, in comparison with students learning skills with written feedback only, students learning using self evaluation from AV recording demonstrated higher scores in competency, communication skills and learning motivation (Yoo et al., 2009).

The literature, therefore, reveals that the teaching and assessment strategies in CSLs are perceived by educators and students as useful to learning. However, it is recognised that learning in CSLs cannot replace the experience that can be gained from an educative clinical placement (Knight and Mowforth, 1998; Du Boulay and Medway, 1999). Nevertheless, exposure to learning opportunities in practice cannot be guaranteed. Therefore, while "real" clinical experiences have always been at the heart of healthcare education, teaching

in CSLs is needed to supplement and enhance it (Du Boulay and Medway, 1999). Therefore, the focus should not be on comparing CSL teaching with teaching in the clinical setting. Rather, the emphasis should be on exploring how the CSL can facilitate and prepare nursing students for the learning and implementation of clinical skills in practice.

Of the previous research examined, the majority employed quantitative methodologies. It is recommended that more interpretivist research be carried out in this area (Bjørk, 1995; Bradley and Bligh, 2005). In addition, many of the studies focused on specific skills learned in CSLs. However, skills are highly complex and contextual (Bjørk and Kirkevold, 2000). A qualitative approach would allow a more holistic exploration, as opposed to the examination of specific skills. Therefore, it was deemed appropriate to conduct qualitative research exploring the broader concept of the CSL and its role in preparing students for the real world of practice. This was conducted as PhD research completed in 2010. The specific aspect of the research focused upon in this paper, was to explore students' and staffs' experiences and perceptions of teaching and assessment strategies employed in the CSL.

Methods

Study Design

A multiple case study design was used to explore the role of the CSL in Irish nurse education. Multiple methods of data collection included documentary analysis, non-participant observation and interviews. This paper presents the findings from qualitative semi-structured interviews, which explored nurse educators', clinical staffs' and student nurses' perceptions and experiences of the CSL. In Ireland, there are 13 HEIs that offer the Bachelor of Nursing Programme. Of these, five were chosen for inclusion in the study based on specific criteria for representativeness and typicality (Casey and Houghton, 2010).

Sampling for Interview

For semi-structured interview, purposive sampling was employed to select academic staff (n = 15), clinical staff (n = 15), newly qualified staff nurses (n = 8) and undergraduate nursing students (n = 20) from across the five study sites (see Table 1). Academic staff and clinical staff were interviewed because of their key role in students' learning and implementation of clinical skills. Newly qualified nurses were interviewed to gain the perspective of those who had recently been through the undergraduate programme. The student group were recruited from undergraduate students undertaking the Bachelor of Nursing Degree. A junior student was defined as an undergraduate in the first year of the programme. A senior student was defined as an undergraduate student in the third or fourth year

Table 1
The number and type of interview participants.

Participant type	Total: 58
Student and newly qualified nurses	28
Junior student (1st year student)	10
Senior student (3rd and 4th year students)	10
Newly qualified nurse	8
Academic staff	15
Lecturer	8
CSL manager	3
CSL technician	3
Clinical tutor	1
Clinical staff	15
Clinical nurse manager	5
Clinical placement coordinator	5
Staff nurse in a preceptorship role	5

of the programme. The purpose of interviewing both groups was to capture the perceptions of those with the least and most experience.

Second year students were excluded from the study. In the second year of the undergraduate programmes, students most commonly had placements in specialist areas such as psychiatry, theatre and the community settings. Therefore, it was considered that they were not working in clinical areas that would give them sufficient scope to practise the clinical skills that they had learned in the CSL.

Ethics

At each of the five case study sites, ethical approval was obtained from the research ethics committee of both the HEI and the affiliated hospital. Informed consent was obtained from all participants and confidentiality was maintained. Specific ethical challenges pertaining to this case study research and the details of how these were addressed are the focus of another paper (Houghton et al., 2010).

Data Analysis

Morse's (1994) analytical framework outlining four key stages: comprehension, synthesis, theorising and recontextualisation, was used to guide the overall data analysis. This was achieved by utilising the strategies proposed by Miles and Huberman (1994): open coding; broad coding; pattern coding; memoing; distilling and ordering; testing executive summaries; and developing propositions. All the data were managed using the QSR NVivo software package.

Rigour

The approaches to rigour outlined by Lincoln and Guba (1985) were adopted to guide the specific strategies used to ensure the trustworthiness of the research. These are: credibility, dependability, confirmability and transferability. The specific strategies that were used are listed in Table 2.

Data

Data analysis from all sources of evidence revealed key themes surrounding the role of the CSL in preparing students for clinical practice. They described the teaching and assessment strategies used in the CSL. The analysis also described students' experience of practising their learned skills in clinical practice, thus permitting a discussion on how the CSL could prepare students for the real world of practice. This paper focuses specifically on the interview findings, which highlight how teaching and assessment strategies in the CSL were perceived. The relevant theme focusing on this aspect of the research was: Creating a Bridge to the Real Word of Practice. Within this theme, utilising the strategies proposed by Miles and Huberman (1994), propositions regarding teaching approaches, assessment approaches and a pathway to practice were developed, which contributed to the overall study findings.

Table 2
The strategies employed to ensure rigour.

Approaches to rigour	Strategies
Credibility	Prolonged engagement and persistent observation
	Triangulation
	Peer debriefing
	Member checking
Dependability	Audit trail
	Reflexivity
Confirmability	Audit trail
	Reflexivity
Transferability	Thick descriptions

Teaching Approaches

The teaching approaches identified by participants included the use of mannequins, real people (students or actors) and scenario-based learning. Most of the participants used the term "mannequin" to describe task-trainers and Laerdal™ SimMan™; the most commonly used simulators in the CSL. The majority of participants valued them for learning psychomotor skills that could not be practised on other students.

> "Well obviously there's only certain skills you can do on the mannequin…like I'd say bed baths, hygiene, injection technique, wound dressings…for things like that, obviously you have to use a mannequin, you can't do it on a student" (academic staff member).

However, some participants from the student group felt that the mannequins were not realistic enough thus limiting their usefulness.

> "In terms of similarities of what you're going to face in the ward… they wouldn't really be very similar. I suppose when you've got patients fighting against you…or heavy patients, light patients" (junior student).

Some of the clinical staff also agreed that the mannequins were unrealistic and felt that they did not help students' development of communication skills. For communication, student and newly qualified participants preferred practising skills on real people.

> "A dummy doesn't talk back to you. I thought the ones [clinical skills] that you could do on another person were much more beneficial to you than the mannequins" (newly qualified staff nurse).

Some participants identified scenario-based learning as a way to improve students' communication skills. They also believed that introducing scenarios would add more context and realism; would be more challenging and would enable students to gain an insight into the reality of practice.

> "I think there should be a lot more… [scenario-based learning], because then you can kind of run through the day of a patient, and not just kind of …'today we're doing bed-washing' or 'today we're doing blood pressures'…it would kind of give us a little more of a real expectation of it" (junior student).

Assessment Approaches

At the time of data collection, three of the five case study sites were using OSCEs as an assessment method. From these sites, participants acknowledged that despite the anxiety that they caused, OSCEs were effective for encouraging students to practise the skill.

> "You don't know what to expect, you'd be nervous about trying to get everything right…because you won't forget it then. Because you'll have everything learned off so well [for the OSCE] you won't forget it if you need to use the skills" (junior student).

Each site had AV equipment installed in the CSL. However, only two sites were making significant use of it. Some of the academic staff considered that the AV equipment could be used as an alternative assessment method that would aid learning by giving students an opportunity to reflect on their performance.

> "The video definitely aids [feedback] better than maybe another person saying it to them. So I think the video instruction in

relation to that really is very good, because it allows them to see themselves and how they communicate" (academic staff member).

While not many students or newly qualified nurses had previously experienced being recorded, some felt that it would be a good opportunity to reflect and learn from their mistakes. Those who had experienced AV recording reported that it was beneficial as it gave them an opportunity to reflect on their performance and identify areas for improvement.

"It is good experience to see it like, because they'd shown us a good one before we'd actually done it, and you could kind of see where you could improve, or whatever" (senior student).

Pathway to Practice

A pathway to practice described how the CSL formed part of a continuum, linking theory and practice. This was aided by the physical environment, which was deemed by academic staff to be realistic and helped to prepare students for the reality of clinical practice.

"I think the students enjoy it because it gives them a sense of reality, and you know the labs are set up like wards…and it just gives them a sense of familiarity…I think it prepares them quite well for the outside world" (academic staff member).

Many of the students agreed that the CSL environment was realistic and helped to prepare them for the hospital environment. The CSL also provided an opportunity to practise the clinical skills, familiarising students with the equipment and providing a safe learning environment with the freedom of making mistakes.

"They can make mistakes you know…and then you can stop them and say 'look, sorry, if you'd done that with a real patient'…So, you know, it allows us to deal with those problems in a simulated environment…so I think that's a huge benefit" (academic staff member).

However, some clinical staff believed that it could not replace the hands-on learning that students received in practice and clinical staff felt they often had to teach students "from scratch" in the clinical setting.

"If they're doing it and learning the skill, it might be fine for the day they're in the lab, then time lapses and they come onto the ward and it's the real setting…I suppose it's just completely different — you would definitely have to start from scratch" (clinical staff member).

In order to create the pathway to practice, both clinical and academic staff believed that an effective, synergistic relationship between the HEI and clinical setting was needed.

"Because we have to be realistic…that we're not in practice and we have to respect the expertise…of clinical practitioners…it's being able to share our expertise with the clinical staff and very much working together" (academic staff member).

However, some clinical staff felt that this was not evident and they reported a lack of knowledge about the teaching and assessment strategies employed in the CSL. They felt that having a documented list of what students were taught in the CSL would be beneficial.

"But if it was a documented list, or if they are assessed on it, what's the required level they're meant to be in first year? I don't know how many skills they teach…But if there was a link between us and the skills lab, we could pick up where the lecturer or whatever left off" (clinical staff member).

Discussion

The findings from this study emphasise staff and students' perceptions of the teaching and assessment strategies used in the CSL and how they may help in providing a pathway to clinical practice. Authenticity of the CSL environment is important; effective links between the HEI and the clinical setting need to be established and maintained; and teaching and assessment strategies need to be used appropriately in order to maximise their benefits for student learning.

Participants in this study underlined the value of having an authentic environment in the CSL. Similarly, in the literature, the importance of having an educational setting that mirrors reality is emphasised (Knight and Mowforth, 1998; Alinier, 2003). This implies that the CSL should, of necessity, be realistic and authentic (McCallum, 2007). This can be achieved by introducing teaching strategies such as scenario-based simulation, which tries to emulate realistic practice. This was also identified in the literature, whereby scenario-based simulation was deemed suitable for the assimilation of holistic aspects of care in an authentic way (Nestel et al., 2003; McCallum, 2007).

In this study, the need for effective links between the clinical setting and the HEI, to create a pathway to practice, was emphasised. The literature also highlights that there needs to be greater linkage and valuable relationships between staff in the CSL and in the clinical setting (Kneebone et al., 2004; Silverman and Wood, 2004). Therefore, effective communication between the two settings is recommended to improve the consistency of clinical skills teaching. Some of the clinical staff in this study believed that the provision of a documented list of the skills that the students learn and are assessed upon would be useful for maintaining the continuum of learning for students. In addition, having individuals working in the education setting who also have direct clinical contact could ensure that skills education is provided by those who are up-to-date with current practice and help to maintain crucial links between the two settings (Mackenzie, 2009; Moule et al., 2008). While not always in place, clinical tutors, or similar roles, should be considered in an effort to develop and maintain a synergistic relationship between the HEI and the clinical area.

It is known that students have reduced exposure to learning in the clinical setting (Hilton and Pollard, 2004; Medley and Horne, 2005; McCallum, 2007). CSLs may be considered a valuable way of providing alternative exposure (Nursing and Midwifery Council, 2007). In this study, mannequins were identified as suitable when it was not possible to practise skills on real people. Similarly, previous research has highlighted that high-fidelity simulators are valuable resources for teaching psychomotor skills (Feingold et al., 2004; Wilson et al., 2005). However, in this study, it was perceived that the mannequins lacked realism and students found it difficult to practise communication skills with them. This finding is supported by the literature (Nehring and Lashley, 2002; Feingold et al., 2004). One participant in this study suggested using microphone equipment to give the mannequins a "voice". This allows the educator to role play in response to the student (Traynor et al., 2010). Additional strategies to enhance the authenticity, such as the use of SPs and scenario-based simulation, can be used in conjunction with simulation models.

In previous research, SPs were found to increase clinical skills performance and communication skills and provide valuable feedback to students (Nestel et al., 2003; Becker et al., 2006; Hale et al., 2006). Their use in CSLs is, therefore, considered beneficial for learning. Rystedt and Lindstrom (2001) also recognise the ability of scenario-based learning to provide students with opportunities to

communicate with patients and staff. It is, therefore, important to consider the development of scenario-based simulation and the use of SPs, in conjunction with mannequin use, as evidence suggests that this could help considerably in preparing students to communicate effectively in practice.

This study found that successful completion of an assessment, such as OSCE, could enhance students' confidence in their performance. The literature supports this, suggesting that increased confidence and better preparation for practice occur by motivating learning and providing useful feedback (Jay, 2007; Rentschler et al., 2007; Rushforth, 2007). Therefore, OSCEs should be a recommended assessment approach. However, further nursing research is needed to determine the validity and reliability of OSCE in determining competency (Walsh et al., 2009). In addition, students also need to develop reflection and critical thinking skills. AV recording, for the purpose of learning from feedback on their own performance, may also be beneficial for students. In this study, AV recording was found to enhance the reflective component of skills performance in the CSL. Similarly, in previous research, students appreciated the opportunity to evaluate performance, recognise their own mistakes, and obtain immediate feedback (Henrichs et al., 2002; Kneebone et al., 2002). AV recording can also enhance competency, communication skills and motivation to learn (Yoo et al., 2009). Therefore, a combination of OSCE and AV recording should be considered when developing appropriate skills assessment methods.

Conclusion

This research explored clinical skills teaching and assessment in the Irish nurse education system as perceived by key stakeholders who have experience with the CSL and student nurse education. Some of the findings are supportive of prior literature while others are new. Specifically, in order to create a pathway to clinical practice, the CSL must provide an authentic learning environment, with the appropriate use of teaching strategies for learning communication and psychomotor skills. Likewise, educators should consider assessment strategies in the CSL that include both OSCE and AV recording. It is crucial that effective links between the HEI and the clinical setting are established and maintained. The importance of clinical staff being aware of what skills students learn in the CSL to ensure consistency in the students' learning experiences has been emphasised.

Any setting that uses CSLs, simulation and assessments such as OSCE for the purpose of clinical skills teaching will have concerns about the transferability of learned skills. For this reason, the need to ensure authenticity and the requirement to optimise the teaching strategies that are used are essential. How effectively these strategies help to prepare students for their learning and implementation of clinical skills in the real world of practice warrants further investigation, and this was the focus of the larger multiple case study.

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