A study of physiotherapy students’ and clinical educators’ perceptions of learning and teaching

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Abstract

Background: Clinical education is a key component to learning in the health professions.

Aims: This qualitative study investigated how physiotherapy students and clinical educators perceived their respective roles in learning and teaching clinical skills during students’ first clinical placements.

Methods: Separate physiotherapy student and educator focus groups were conducted in two major teaching hospitals in Melbourne, Australia during students’ first clinical placements.

Results: The key difference between students’ and educators’ perspectives of their role was their description of how to build knowledge within clinical placement settings. Clinical educators’ focused on steps involved in their teaching tasks, rather than ways to facilitate learning. Their conception of teaching was to impart structured knowledge to students in response to knowledge deficits. Students also identified knowledge gaps but they proposed alternative practical ways to build their knowledge. Their conception of learning was to move from an initial static identification of knowledge deficits, to a more dynamic search for methods and people that might build their knowledge and understanding.

Conclusions: The findings of this research were used to develop a set of teaching and learning statements and strategies that are grounded in the perspectives and experiences of students and educators in the clinical education setting.

Introduction

Clinical education, as a form of experiential learning, involves learning clinical skills in the workplace. It is recognized as the best way for novices to begin to develop clinical reasoning expertise (Ryan & Higgs 2008). It is also a key component to learning in the health professions, because it facilitates socialization in a practice community and provides opportunities for students to actively build and integrate their theoretical and practical knowledge (Kilminster & Jolly 2000; Bryant et al. 2003; Spencer 2003). There is a general agreement that clinical education needs to facilitate personal growth and active engagement in the learning process (Kell & Van Deuren 2002; Griffiths & Ursick 2004), to encourage health professionals to be adaptive and life-long learners (Hobbs et al. 2000; Higgs et al. 2001; Titchen & Higgs 2001; Higgs et al. 2004), and to be able to provide skills enabling collaboration with a range of other health professionals (Ponzer et al. 2004; Bleakley 2006).

For students, learning in clinical contexts requires them to assimilate the values, attitudes and skills that constitute professional practice; negotiate complex and ambiguous learning situations in hierarchical hospital settings and learn from a variety of clinical educators who have different methods and styles of teaching (Jarlski et al. 1990; Higgs & Edwards 2002; Molloy & Clarke 2005). For clinical educators, the challenge of multidimensional roles that include being skilled practitioners, acting as role models and juggling competing needs of patients, students, and associated administrative tasks has been well documented (McLeod et al. 1997; Higgs & McAlister 2007).

For both clinical educators and students, personal epistemologies (their beliefs about knowledge and sources of knowledge) influence the way they approach and adapt to their teaching and learning roles in clinical placement settings (Hofer & Pintrich 1997; McLeod et al. 1997; Kilminster & Jolly 2000; Bagot et al. 2005; Molloy & Clarke 2005; Knight & Mattick 2006; Higgs & McAlister 2007). In addition, the social context of learning (Lave & Wenger 1991; Engestrom 2001) and the impact of professional socialization (Higgs et al. 2008a) are also recognized as highly influential reasons in the development of a sense of professional identity and responsibility in both learners and teachers. These epistemic...
understandings of professional knowledge, in turn, shape the specific meanings or purposes that are attached to the teaching and learning roles, and individual ‘conceptions’ of teaching and learning of educators and students (Triggwell & Prosser 1996; Richardson et al. 2004; Devlin 2006; Kell & Jones 2007).

The conceptions of teaching that are required to achieve the complex goals of clinical education, and build skills of life-long and self-regulated learning, have shifted from a focus on transmitting the curriculum-based knowledge and teacher expertise, to a recognition that professional learning involves helping students to not only acquire knowledge, but also develop and change their own conceptions of knowledge and learning through participation in the professional community (Lave & Wenger 1991; Kember 1997; Higgs et al. 2001; Bleakley 2006; Kell & Jones 2007). The related conceptions of learning that students are required to develop, include an ability to be self-directed, active, independent, goal-oriented (Kell & Van Deursen 2002) and to develop an identity as part of the professional discipline (Higgs et al. 2008b).

Despite the recognition of complexity in the experiential clinical education setting, and the shifts in individual conceptions of teaching and learning that are necessary to accommodate this environment, there has been very little research that has examined how teachers and learners conceptualize their respective roles; whether there is congruence between conceptions of teaching and learning, and how this knowledge might enhance the effectiveness of clinical education (Kell & Van Deursen 2002; Nicol & Macfarlane-Dick 2006; Kell & Jones 2007).

Aims

The primary aim of this study was to examine clinical educators’ and students’ experiences, views and interpretation of the students’ first clinical placement experience. A secondary aim of the study was to use this insight to develop a set of statements about teaching and learning, grounded in clinical educators’ and students’ perceptions of their roles within the clinical education setting.

An important assumption in this research is that there is a causal relationship between the student’s and the educator’s perceptions of their learning and teaching experiences and their interpretation and conception of their roles (Pratt 1992, p 204; Kane et al. 2002). A second assumption is that if educators and students share similar, or have an awareness of each others’ conceptions of the goals of clinical education and professional identities, then the education process is likely to be more effective (Wenger 1998; Kell & Van Deursen 2002; Morcke et al. 2006).

Method

Study design

In order to obtain the data about perceptions and understanding of clinical educators’ and students’ roles, a qualitative phenomenological-based approach formed the research design (Rice & Ezzy 1999). Focus group discussions were chosen as a method for capturing the experiences and interpretations of the key participants in the clinical education process (Kreuger 1988). A key distinction between focus groups and other types of qualitative interviews is that the participants are encouraged to interact with each other and to develop different perspectives within the discussion (Polgar & Thomas 1991). Given that the research aim was to examine the experiences of teaching and learning in a hospital department setting, focus group discussions provided a means to encourage and utilize the interaction between peers within the educator and student groups.

The research was undertaken and ethics approval was obtained from an Australian University School of Physiotherapy. The primary researcher (C. M. Delany) is a physiotherapy academic based at the School of Physiotherapy, but not involved as a clinical educator.

Participants and recruitment

The participants were recruited from the 3rd year of a 4-year undergraduate program. In their 3rd year, students move from 2 years of a university-based curriculum to their first clinical placement experience comprising three, 6-week placement blocks, in large metropolitan teaching hospitals. This is a time when learning expectations change from theory and research-based knowledge about physiotherapy practice (delivered in the first 2 years via a university based, combined problem-based learning and lecture format), to clinical bedside and less structured teaching and learning. Therefore, this period is a significant turning point in students’ undergraduate clinical education.

In this research, the participants were purposively recruited from two of the three large metropolitan public hospital settings which are most commonly used for provision of clinical placements for undergraduate students (Mellion & Tovin 2002; Johnson & Waterfield 2004), on the basis that the students were attending their 3rd year placement and educators were involved in supervising these students during their placement. A notice explaining the research aims and methods was placed in the physiotherapy staff room for both 3rd year students and their clinical educators, requesting their voluntary participation in separate focus groups which were to be held for 1 h with lunch provided. Informed consent to participate was presumed by their attendance at the focus group session.

Focus group format

Student focus groups were conducted in the 5th week (prior to their assessment in the final week) of each of three 6-week placement blocks. Educator groups were held in the week after students had completed their placements. In total, six student and six educator focus groups were conducted over the two hospital sites (n = 12 one hour focus group sessions). The participants, from the two teaching hospitals comprised 45 3rd year undergraduate physiotherapy students (50% of the 2006 year level) and 19 clinical educators (the majority of the clinical educators involved in 3rd year clinical education,
with clinical education experience ranging from 1 to 19 years and with 55% having postgraduate qualifications in clinical physiotherapy). Each focus group was audiotaped and led by a professional focus group facilitator who was not a physiotherapist or otherwise involved in the research. Either the primary researcher C. Delany (CD), or the second author, P. Bragge (PB), attended each of the focus group sessions but did not participate in the discussion other than to take notes or summarize the issues discussed. These notes were combined with the recorded focus group discussion data to add an extra perspective to the data set (Krefting 1991).

The participants (in separate educator and student focus groups) were invited to consider and discuss the learning or teaching process, including definitions of their respective roles and factors that had facilitated or hindered their role as a student or educator (Table 1). These questions were developed by the authors, in consultation the head of clinical education in the University of Melbourne, School of Physiotherapy, and from a review of the key themes in the literature about the nature of and challenges to clinical teaching and learning. The research project also involved the development and evaluation of a 6-week critical reflection program in one of the clinical placement sites in the second clinical block. Data about the experiences of teaching and learning in the clinical placement was compared with students' experiences of learning through participation in the critical reflection program. This component of the research has been published elsewhere (Delany & Watkin 2008).

### Data analysis

The recorded data from each of the focus groups was transcribed in full by a trained research assistant and analysed individually by the primary researcher (CD) and the second author (PB). The thematic analysis was guided by the systematic approach and tenets of grounded theory (Strauss & Corbin 1998). This involved two main steps. First, each author independently categorized the themes about clinical teaching and learning including participants' descriptions of their roles. Second, the authors compared their findings and further analysed the themes by collaboratively considering the following conceptually based questions:

1. **What are the key differences and similarities in approaches and strategies used by educators and students to teaching and learning in the clinical placement setting?**
2. **How do these descriptions relate to theories of teaching and learning and sociocultural influences on learning?**

Following this analysis and data synthesis of the themes in both the focus group data and the literature, the findings were presented to participants and other physiotherapy staff of the two participating hospitals in a seminar format. Discussion and feedback from seminar participants about the interpretation and presentation of the data was used as a form of triangulation and verification (Hicks 2004) to further clarify the final presentation of the findings.

The quotes illustrating the themes analysed from the data are presented without attribution to individual participants because each successive focus group comprised a combination of new and previous participants. The data was pooled to provide an overall data set rather than attributing individual comments to a particular participant.

### Results

Two main thematic categories were identified within the student data:

1. **‘Dynamic knowledge development’: students’ perspectives on learning.**
2. **‘Self-confidence’: the relationships between students’ perceived capacity to learn and how this was influenced by differing levels of self-confidence.**

#### Theme 1: Dynamic knowledge development

Analysis of students’ experiences and discussion of learning over the three clinical placement blocks demonstrated that student learning was a dynamic and progressive process. Their descriptions of their role as a learner changed over time from initially discussing *what* they needed to know to being more aware of *how* they could best learn. For example, in the first clinical placement block, students were initially concerned with identifying the skills and knowledge they lacked for adequate performance with patients. In particular, students were surprised to find the need for, and felt they were ill-prepared to deliver, explanations and justifications about...
their role as physiotherapists including the nature of the treatment they could provide:

I saw a man who didn’t like physiotherapy. He thought that whatever we were doing was more harm than good. My supervisor’s response was to say ‘Look, you’ve got to really explain to him what you are doing and what we’re doing is going to help’. But I didn’t know how to actually explain what we’re doing – or I felt that I didn’t – and I didn’t know how to word things to patients to tell them what we’re doing.

This initial labelling of gaps in their knowledge suggested that learning was a relatively static process; requiring the knowledge gaps to be filled with either new ‘clinically based’ knowledge or a reinterpretation of their previously learnt theoretical knowledge. From this knowledge deficit conception of learning, students identified the need to spend more time at home, learning background theory so that they were better prepared for the clinical environment:

I go home and try and revise lecture notes about drugs, blood test results and stuff that you’re supposed to know all the standard values and things for. When I was at uni I didn’t realise you needed to know that. But then, you realise that it is important, so I’ve been making a list in a notebook of extra things that I need to remember.

In the second 6-week placement block, students moved from identifying their knowledge gaps and ways to fill those gaps, to more specific articulation of how they could adjust to the learning environment to meet their own learning needs. They identified factors that were influential in either facilitating or hindering their ability to learn clinical skills on their placement. For example, one student identified how learning theory at home needed to be more focused so that it was relevant to the particular patient. Another student recognized that the process of learning was more than just applying factual knowledge to a patient problem:

It isn’t just black and white. You think it’s really black and white and there are so many patients where there are different things that you need to do that are different to what the text books would say. And then there are different things you need to do depending on which supervisor you talk to as well. So it’s just sort of making up your mind, using the theory and enough so that it’s safe and that’s how you’re doing to provide the treatment but also being able to use your common sense.

Using this more fluid approach, students identified strategies for ‘unpacking’ the learning process, or ways to convert their theoretically based knowledge to practical clinical decisions. They distinguished and recognized relationships between procedural or ‘hands on’ knowledge needed for treating people, and theoretical knowledge gained during formal processes of university based learning:

I find while I’m here I’m concentrating more on the procedural ways of doing things, discharge notices, reading patient notes, finding out who the occupational therapist on duty is, things like that, rather than knowing someone who just had a knee replacement can be restricted for so and so weeks. That sort of knowledge I want to be more automatic so I can focus on the procedure and then automatically know that this is the best way that I will then adapt to a patient, whether it be less or more exercise.

Students also discussed how learning at clinics depended on interactions, with little time to remove oneself from the learning situation, to reflect upon and come up with the answer:

I try to gain as much information on the patient from the notes as I can. Also speaking to other staff members and just going on sort of general knowledge because there is no time to go away and research specific cultures or religions or whatever. Speaking to other students and other staff members helps as much as searching for theory.

Theme 2: Self-confidence

An overarching theme apparent in all student focus groups was that of students’ self-confidence. Students made direct connections between their levels of confidence and their capacity to learn:

I started out pretty confident and then the feedback from my supervisor got pretty negative and it kept getting negative so the confidence went down a bit and, I started getting annoyed with the feedback, the feedback was always negative and it seems I was doing absolutely nothing right.

With my first supervisor, I just didn’t like her and she just made my self-esteem pretty low. Luckily we had 2 supervisors so that sort of gave me a bit of a break. But since then, I’ve had 2 awesome supervisors and I feel so confident now. I’ve just been having really good relationships with patients, feeling comfortable to ask my supervisor questions and sort of know that my supervisor has confidence in me, which is good.

Students identified that despite an overall improvement in their levels of confidence and knowledge over the three clinical placements, their day-to-day levels of confidence fluctuated. Feeling connected and valued as a member of the physiotherapy department team significantly improved their confidence levels as a student:

In my last clinic I was very much a colleague there. They looked forward to us being there because we took half the patients for them. Like we weren’t students but more like colleagues.

The themes of confidence and the need for dynamic and responsive learning environments were reflected in teaching strategies that students identified as helpful to their learning (Table 2).
Table 2. Students’ identification of helpful teaching strategies.

<table>
<thead>
<tr>
<th>Clinical educators who…</th>
<th>Quotes from students</th>
</tr>
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<tbody>
<tr>
<td>Modeled good treatment and provided time for reflection about learning:</td>
<td>Being given an opportunity to watch an entire assessment and treatment is a helpful strategy. There is a lot of pressure to always be doing and participating and leading yourself.</td>
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<td>Established students’ knowledge base prior to the patient encounter:</td>
<td>If someone said do this and you’ve never done it before and you try to fumble your way through it and then the supervisor jumps in when you’re half way through, that style of teaching doesn’t help anyone.</td>
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<td>Provided opportunities for learning ‘with dignity’:</td>
<td>It was helpful when my supervisor structured the treatment into subjective and objective assessments and then I had to go out and my supervisor told me what I’d missed out on, what she would have done and how to elaborate and she put it in a really positive way so I was able to go back in and then say the things that she suggested to me and still keep my face and keep going.</td>
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<td>Gave direct and immediate feedback:</td>
<td>If you get it straight away then you know exactly what you need to do the next time rather than a week later saying ‘You know you could have done this’.</td>
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<td>Provided graduated supervision:</td>
<td>They had so much confidence in you saying ‘Go and do that’ it was sort of like I’m flattered that you have so much confidence in me, but I really want you to be here with me in the beginning stages and then in the next few weeks let me lose.</td>
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<td>Provided explanations as to how to think through a problem:</td>
<td>So, like you’ll come out and they’ll say well, why were you doing this, and what else could you have done, and they really get you thinking about what you’ve been doing and why you’ve been measuring something, or why you’ve got the patient to do that, and I’ve found that that’s really, and it hasn’t been intimidating for me but it’s just helped me think about exactly what we’re trying to achieve, and I’ve found that really good.</td>
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<td>Were approachable to ask questions:</td>
<td>If I come out from seeing a patient, I like to just go I was thinking this, this, and this, and then they you know, it is good to know the supervisor’s not going to let you go back in and do something that’s completely irrelevant, or not, not going to help, like they’re still going to correct you.</td>
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Results: Clinical educators’ experiences of teaching

Two dominant themes to emerge from the clinical educator focus group discussions were:

(1) Making transitions: reconceptualizing their role from that of a clinician role to that of an educator.

(2) The structured teaching process: responding to students’ needs and identifying the specific skills that students need to learn.

Clinical educator Theme 1: Making transitions. A common feature of work for health professionals employed in public hospitals is the often quick transition from being a student to a new graduate clinician, then a clinical educator, with responsibility for managing a group of undergraduate students within the clinical education program. All of the clinical educators participating in the focus groups could recall their experience of learning clinical skills as an undergraduate student and importantly, how these experiences as learners informed their current teaching practices:

I used to have a supervisor called the smiling assassin (laughter) she’d be in a corner, and you know, she’d be just busy writing down notes, and you know she’d enjoy the power imbalance, and I really didn’t like that. Yes we do know more than the students but, they’re here, so we should make it challenging, make it fun for them, but you don’t have to be on a power trip. So that’s definitely what I try not to do. I always try and make it fun and challenging for them and ask them the questions, but never, make them small, or make them feel small or less important.

Educators spoke of little time to reflect on the change in scope of their responsibilities or for reviewing the educational and learning implications of their particular approach to teaching. As a consequence, many of the clinical educators relied on their past experiences as students to inform their educational practices:

Reflecting back on how I was taught helps. Thinking back about what supervisors were good and learning from them, and what supervisors were bad and avoiding their mistakes, and also just learning from experience.

Clinical educator Theme 2: The structured teaching process. Clinical educators identified a consistent and clear set of skills that they felt were important for students to gain during their clinical placements, including the teaching strategies they used to facilitate clinical skill learning. In particular, the ability to integrate clinical skills and theoretical knowledge through a process of clinical reasoning was raised as a significant and overarching skill in all aspects of clinical learning:

I always say to my clinical students, it’s like a detective story. You go there, you pick up clues and from those clues you start to make deductions and, then you, use a scientific process by forming a little hypothesis along the way and you prove and disprove each hypothesis as you go. Each time you do it might open up another hypothesis that you need to and that’s what I like to promote the students into thinking.

Although teaching roles were described and defined according to the attainment of required skills and competencies, through their discussion in the focus groups, clinical educators also demonstrated a level of responsiveness to each student to facilitate this process. A number of educators described their role as a provider of education or information
rather than a conduit through which students might actively learn:

I see myself as educating them, supervising them, teaching them, and sort of challenging them, but role model, I don't relate to that straight away even though I can see that they might look up to you as a physio etc. and I certainly do have a lot of role models that were my supervisors but for me, I just don't see myself as a role model straight off.

I like to think I'm some sort of mentor because that's almost a two way relationship in that they are coming to you for information as well as you providing information so it's both ways of learning and you're just assisting them on their way rather than telling them exactly how this is.

Some educators focused on the need to respond to the students' individual learning needs by describing their teaching methods as:

get a feel for what the student seems to want watch them initially

Others described ways to engage the student as an active learner:

encourage them to make plans ask them to provide a rationale for decisions.

In many of their descriptions of how to teach, clinical educators focused on gaps or deficits in students' knowledge and from this basis, clinical education was directed towards what they needed to do to build knowledge and skills to fill the gaps:

If we have noticed students that are having problems we tend to increase the supervision, the closer supervision. Obviously we’re always there but we’re not over their shoulders if they’re going OK. If we’re concerned, we ensure that we see a little bit more of the student one on one with the patients so that we can really work out where their gaps are

Although the educators’ recognized the need to motivate, guide and respond to students, their descriptions of teaching tasks were often framed as processes or methods of giving information to the student. For example:

- teach students how to break the process down give them feedback
- Teach them the importance of common sense in making clinical decisions

These descriptions identify a combination of attentive, responsive and structured teaching strategies used in clinical education. They demonstrate that the clinical educators’ conception of their teaching role encompassed many of the features of a knowledge transmission model (Kember 1997). That is, they identified their teaching role to impart information and structured knowledge to students, in particular, where there was a demonstrated deficit. They also highlight a willingness and motivation to engage dynamically, with students, although this description was tempered with the concurrent need to ensure that students attain a specific set of competencies and skills. Whilst students also identified gaps in their knowledge, as they progressed through the clinics, they proposed alternative practical ways to build their knowledge. Their conception of learning was to move from an initial static identification of their knowledge deficits, to a more dynamic search for methods and people that might build their knowledge and understanding so that they might be included in the practice community.

The key differences between students’ and educators’ perspectives and interpretation of the learning and teaching experiences were in their descriptions of how to build or construct knowledge using the clinical placement setting. Clinical educators’ focus for teaching students was to identify the steps involved in their teaching and to respond to students’ expressed or apparent learning needs, rather than to highlight ways to facilitate learning from a theoretical basis of teaching. These steps were identified as structured steps designed to fill gaps in students’ knowledge base.

**Discussion**

This qualitative study investigated how physiotherapy students and clinical educators experienced and perceived their respective roles in learning and teaching clinical skills during students’ first clinical education placements. An important underlying premise of the study was that both clinical educators’ and students’ perceptions of teaching and learning influence the way they approach and adapt to the teaching and learning requirements of the clinical placement settings, and provides one representation of their conception of teaching and learning. Some important limitations of this study are that because it was confined to one Australian physiotherapy school and a purposively selected sample was chosen on the basis of students and educators who were attending particular clinical sites, there are limits to its generalizability and transferability. Related to this, the study was designed to focus on the data from the focus groups, rather than encompassing the broader organizational context of the clinical placement. Such information would be valuable in rendering a more detailed ethnographic view of potentially important sociocultural and organizational factors that might influence the teaching and learning experience. This would be a valuable future research avenue. In privileging the student and educator perspectives about teaching and learning, the research leaves out the patient’s voice. Both a broader ethnographic perspective and the inclusion of patients’ insights into clinical education are important considerations for future research into factors influencing the experiences and outcomes of the clinical education. It should also be acknowledged that the discussion and descriptions of teaching and learning practices espoused within the focus groups might not be a representative of actual practice.

However, despite these limitations and directions for future research, the findings of this study provide a valuable insight into the similarities and differences between the perspectives of students and clinical educators of the clinical teaching and learning process. The study adds to the evidence, in other clinical contexts, to enhance the understanding of factors that
impact on the effectiveness and experience of clinical education across the health professions.

The findings suggest that clinical educators tend to rely on a structured approach of knowledge transmission. According to the phases of learning required to gain expertise in skilled performance (Ericsson et al. 1993), this structured and guiding approach is highly relevant to students. It provides necessary information and knowledge to increase their technical competence related to clinical practice. Coupled with deliberate practice and study, it results in deeper levels of knowledge and skill acquisition (Ericsson et al. 1993; Moulaert et al. 2004). In addition to this approach many educators also demonstrated responsiveness to students’ levels of knowledge and skill and they altered the amount of direct guidance in accordance with students’ levels of competence. This type of responsiveness resonates with the phases of learning identified by Ericsson et al. (1993) and steps involved in developing expertise in clinical practice (Jensen et al. 2000), where students gradually move from a reliance on the knowledge and motivation provided by the instructor to develop their own critique and deep understanding of the professional knowledge base and skill performance.

However educators’ descriptions of a structured and responsive approach did not always align the students’ descriptions of their learning. In addition, their descriptions did not encompass ideas of learning through socialization and inclusion within practice communities (Lave & Wenger 1991; Higgs et al. 2008a). For example, the two themes to emerge from analysis of student focus groups (‘self-confidence’ and ‘dynamic knowledge development’) demonstrate that the students in their first block of clinical placements were focused on active and self-directed learning. They combined structured approaches to teaching clinical skills with aspects of their clinical learning environment including learning through interaction with other health professionals. Importantly, where there was a mismatch between the goals and strategies of teaching and their own goals of learning, they were still able to progress towards achieving required competencies.

The student findings are consistent with theories of learning that emphasize the importance of a shared discourse (Loftus & Higgs 2005). Of particular relevance, is Vygotsky’s (1978) explanation of the zone of proximal development (ZPD). On the one hand, this zone comprises the space between the developmental level determined by students’ independent problem solving, and on the other, the potential developmental level they might achieve under adult guidance or through collaboration with peers (Vygotsky 1978).

Vygotsky’s ZPD highlights the importance of mentors, peers and supervisors to assist the students to identify and scaffold required knowledge, including how to create processes to achieve higher levels of competencies and understanding (Loftus & Higgs 2005). This includes not only a higher understanding of technical professional skills needed for improving performance, but also the provision of a pathway to enable the student to be able to contribute and participate as a member of the professional community (Higgs et al. 2008b).

In the research, students identified the importance of Vygotsky’s ZPD through their recognition of the importance of support and approval from supervisors, to their learning. In the first clinic, students expressed varying levels of personal confidence, influenced by both the results of their treatment interventions and the feedback about their performance from their supervising clinical educators. In the second focus group sessions, students expressed increased confidence in the process of learning in clinical placements related to their increasing familiarity with the clinical environment. However they were still conscious of the impact of their relationship with their clinical educators and how this interaction and relationship affected their confidence and willingness to actively engage in the learning process.

Students also described higher levels of self-confidence and satisfaction with their learning encounters when they were involved within the departmental team or when other health professionals provided them with alternative perspectives. These ideas of learning through a process of gradual inclusion from the periphery to increased participation have been articulated previously by Lave & Wenger (1991). Similarly Billet (2001), in his development of a workplace learning pedagogy, highlights the importance of moving from peripheral to full participation, having access to goals for and direct guidance about performance and making use of the broader workplace environment as a source of guidance to facilitate learning.

The findings suggest that some aspects of student learning in clinical placements are more generic than others. For example, students identified that being included – both in the discipline-specific department, and more generally in the hospital organization – was an important facilitator for their learning. This aspect of learning was emphasized more by students than educators, who tended to focus on their role of imparting discipline-specific competencies in a clear and structured way.

Increasing congruence between conceptions of learning and teaching

The findings of this research highlight some gaps and dissonance between the aims and methods of teaching and learning within the 3rd year students’ clinical placements. On the basis that congruence between teaching and learning aims is important, a set of teaching and learning ideas and strategies using the mnemonic BUILD were developed. These statements were both grounded in and constructively responsive to the findings of this study (Table 3). The BUILD set of statements is intended as a set of statements to promote further research about experiences of and factors influencing learning and teaching in clinical placements. These teaching and learning ideas and practical strategies to achieve them are not new and have previously been identified in other studies (Barnsley et al. 2004; Mamede & Schmidt 2004; Dorman et al. 2007; Zimmerman et al. 2007). However this research confirms their importance as a means of achieving congruence between the perspectives of both educators and students within the one clinical placement setting.

The mnemonic BUILD denotes a constructive activity that is responsive and dynamic. The meanings for each of the letters are derived directly from comparing and then
seeking congruence between students’ and educators’ descriptions and understanding of their role in the clinical education setting. The practical strategies that flow from these statements include the need to:

1. Provide increased preparation for students prior to clinics or at the beginning of the clinical experience in the area of communication skills (patient/student and supervisor/student). In particular, provision of experiences with ‘real’ or at least ‘simulated’ patients to enhance students’ ability to recognize the range of negotiations, explanations, persuasion and accommodation that are required when dealing with patients and other members of the health care team.

2. Ensure the goals of clinical education are dynamic and linked to the progressive learning needs of students during the clinical placement period.

3. Increase the interdisciplinary sources of learning for students on clinical placements. For example, encouraging students to attend team meetings and shadow other professions within the clinical environment.

4. Provide an explicit framework of teaching and clinical supervision so that students are able to independently identify their progress within the structure.

For educators who in this research, tended to focus on the structure and content of information that they needed to provide to students, three key practical strategies to facilitate a more student-centred conception of teaching include:

1. Participation in continuing education forums that discuss clinical education pedagogies and principles of teaching and learning in clinical placement settings

2. Identification and review of goals and processes of clinical education against the experiences and learning strategies adopted by the students.

3. Evaluation of teaching practices on the basis of their effect on student self-confidence.

Conclusions
This research suggests that there is some lack of congruence between the roles of learning and teaching expressed by students and their clinical educators. Students described their role to identify knowledge gaps and then actively seek out ways to build self-confidence and attain relevant skills and knowledge. Educators described their role as imparting information strategically and incrementally so as to build student knowledge. Educators’ conceptions of their teaching role reflect a ‘knowledge transmission’ model of teaching that is not always congruent with students’ more dynamic and adaptive conceptions of learning. The key recommendations arising from this study are described in a set of five educational guiding statements using the mnemonic BUILD. The underlying contention of these statements is that the goals and methods of clinical education should encompass students’ individual interpretation and developing knowledge frameworks as a more explicit basis of the clinical education curriculum and process. The BUILD statements need to be tested in future research to examine their validity and influence on both the process and outcomes of clinical education.

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