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ORIGINAL PAPER

A study of critical reflection in health professional education: 'learning where others are coming from'

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Abstract A dominant focus of clinical education for health professional students is experiential learning through an apprentice model where students are exposed to a range of clinical scenarios and conditions through observation initially, and then through supervised clinical practice. However experiential learning may not be enough to meet the need for health professionals to be flexible, self-aware and understanding of alternative perspectives or 'where other people are coming from.' Critical reflection skills are recognised as a way of thinking and a process for analysing practice, that enables learning from, and redeveloping professional practice in an ongoing way. This paper describes and examines the effect of a three hour per week, six week critical reflection program, grounded in knowledge paradigms of postmodernism, reflexivity and critical theory, on third year undergraduate physiotherapy students' experience of their first clinical placements. The theoretical basis of the program provides a potential bridge with which to link and broaden the established framework of clinical reasoning theories. Within the program, students' critical reflection discourse focused on notions of power, hierarchies, connecting with others and relationships. Their feedback about the effects of the program highlighted themes of validation and sharing; a break in clinical performance and a broadening of their spheres of knowledge. These themes resonated with students' overall experiences of learning in clinical placements and provide some evidence for the inclusion of critical reflection as a valid and worthwhile component of early clinical education.

Keywords Critical reflection · Clinical education · Physiotherapy · Reflexivity · Postmodernism · Theory

Introduction

A dominant focus of clinical education for health professional students is experiential learning through an apprentice model where students are exposed to a range of clinical

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scenarios and conditions through observation initially, and then through supervised clinical practice (McLeod et al. 1997; Dornan et al. 2007). In this model, the learner 'acquires knowledge and skills from an expert or master with the goal of emulating their expertise (Higgs and Titchen 2001). Recent critiques of experiential learning, assessment based and apprenticeship models suggest that that they focus on building individually-based, discipline-specific knowledge, operational competence and outcomes (Rees 2004; Bleakley 2006), and neglect the idea that professional learning and practice involves adaptive, socio-cultural and heuristic or interpretive processes (Eraut 1994; Jensen et al. 2000; Edwards et al. 2004; Talbot 2004; Bleakley 2006). In other words experiential learning may not be enough to meet the need for health professionals to be flexible, aware and understanding of alternative perspectives or where other people (patients, other health professionals, hospital administrators and others), are coming from (Trede et al. 2003).

The role of critical reflection as a component part of health professional clinical education has risen to prominence in the literature as a framework to understand and deal with the dynamic and complex environment of health care practice (Boud et al. 2006). Critical reflection skills are recognised as a way of thinking and a process for analysing practice, that facilitates practitioners and students to learn from, and redevelop their practice in an ongoing way (Kember 2001; Fook 2004).

Critical reflection in healthcare

Critical reflection has received considerable attention in a range of health professions, including nursing (Howell 1989; Johns 1995), social work (Taylor and White 2000; Gardner 2003; Fook 2004), medicine (Maudsley and Strivens 2000; Henderson and Johnson 2002; Cole et al. 2004; Iedema et al. 2004), dentistry (Pee et al. 2002), occupational therapy (Routledge et al. 1997) and physiotherapy (Larin et al. 2005; Clouder 2000; Cross 1997). Some studies have described ways of developing and integrating reflection into the curriculum (Francis 1995; Richardson and Maltby 1995; Routledge et al. 1997; Snadden and Thomas 1998; Henderson and Johnson 2002); others have recognised its significance as a measure of expertise (Shepard et al. 1999; Edwards et al. 2004; Dye 2005) and others have discussed ways to measure its effect (Pee et al. 2002; Boenink et al. 2004). Various definitions of the process of critical reflection share a common theme of trying to understand how people arrive at judgments and decisions about complex problems (King and Kitchener 1994). For example, in physiotherapy, critical reflection has been defined as "the higher order intellectual and affective activities in which physiotherapists engage to critically analyse and evaluate their experiences in order to lead to new understandings and appreciate the way they think and operate in the clinical setting" (Donaghy and Morss 2000, p. 13).

Some commentaries about the possible role of critical reflection as a component of clinical education programs are based on the proposed link between the realities of work as a health professional and the skills and attitudes that flow from being critically reflective (Jensen et al. 1990; Maudsley and Strivens 2000; Henderson and Johnson 2002; Trede et al. 2003; Cole et al. 2004). Iedema et al. (2004) suggest the work of healthcare practitioners (ideally) encompasses three important components. The first is a level of reflexivity about its own practices and paradigms of knowledge that underpin specific healthcare practices. The second, an ability to understand and work with other health practitioners, and third, an ability to articulate complex descriptions of different knowledge domains contributing to health practices. The skill of making reflective

judgements is seen as an important overarching skill, that incorporates these components, and enables negotiation and management of multiple layers of technical and interpretive knowledge required by autonomous health professionals (Higgs and Titchen 2001; Dye 2005).

Although there is evidence of increasing interest in the idea of critical reflection and its relevance in clinical practice, there has been very little critique of the theories of critical reflection (Bleakley 1999), and how these theoretical premises might inform its inclusion into health education programs. In contrast, in other areas of clinical practice, such as the role and methods of clinical reasoning, there has been a sustained focus on and research into the development of its underlying epistemology and value as a framework to guide decision-making in clinical practice (Higgs et al. 2008).

This paper has three broad aims. First, to provide a theoretically based description of a critical reflection program delivered in the third year of a four year undergraduate physiotherapy program. Second to evaluate the effects of the program on students' experience of learning clinical skills in their first clinical placement and third to suggest ways that critical reflection, explicitly informed by theory, might be integrated into the clinical education curriculum.

We begin by introducing three theoretical perspectives that underpin the process of critical reflection and which we used to develop a small group critical reflection program. These traditions represent different epistemological frameworks that not only provide a theoretical basis for critical reflection but also enable identification of how critical reflection might articulate with epistemological frameworks of clinical practice, and in particular, clinical reasoning. We draw from the work of Fook (2002, 2004), who, writing from a background of social work practice, linked ideas of reflective practice with underlying theoretical bases of postmodernism, reflexivity and critical theory. Fook (2004) used these theories as both definitions and tools of critical reflection to analyse and understand practice or experience.

Critical reflection: three underlying theories

The first theory is reflexivity. Patton (2002, p. 65) described reflexivity as a level of consciousness of 'cultural, political, social, linguistic and ideologic' origins of one's own, and others' voice and perspective. Although reflexivity has traditionally been associated with paradigms of qualitative research (Barry et al. 1999; Patton 2002; Hansen 2006), it is increasingly recognised as important in healthcare practice (Taylor and White 2000; Jensen 2005). Reflexivity has clear links with reflective practice as a means of increasing awareness of how personal values and beliefs interconnect with social and environmental contexts (Boud et al.1985).

Postmodernism is the second theoretical perspective. Fook (2004) interpreted this theory to involve asking questions of modernist (linear and unified) thinking in clinical practice contexts; to value and expect uncertainty and to be modest or at least self aware in relation to one's own position within multiple realities and perspectives. Understood in this way, postmodernism provides a framework to construct and deconstruct meaning and knowledge through conversation and dialogue, and a means of breaking down barriers created by privileged positions and knowledge.

One criticism of postmodernism, especially as it applies to professional knowledge and practice, is that whilst it enables critique, analysis and deconstruction of unified and hegemonic systems of knowledge and practice, it does not necessarily provide a way of

definitely acting in clinical practice (Hughes and Sharrock 2007). To counter this, Pease and Fook (1999) explicitly adopted a stance of 'weak postmodernism' which they defined as one that values empiricism and unified knowledge, but positions such knowledge as one of the many perspectives of professional work. This theoretical framework provides a pathway to embrace difference, complexity and a way of including and noticing social, cultural and emotional perspectives on the process of learning and working (Grace 1997). When applied to our program of critical reflection, this theory provides a framework to construct and deconstruct understanding and knowledge through conversation and dialogue in small group discussion settings.

The third underlying theoretical paradigm is critical theory. This theory focuses on the influence of the social world including how hierarchies of knowledge and power, influence the development of knowledge and practice (Higgs 2001). Critical theory provides a theoretical means to encourage students to be more mindful of the factors that both culturally and historically influence their clinical learning. In the context of critical reflection about clinical practice and learning, this is an important underlying theory, because it provides a way to both describe and distinguish between empirical and evidence-based reality and other realities and perspectives. It therefore offers a new way to understand practice and is potentially emancipatory (Trede et al. 2003).

We used these three theoretical perspectives and intellectual traditions to develop our critical reflection program and research. Our version of critical reflection is one that promotes engagement with the learning and practice environment through a process of deconstruction through dialogue; exposure of underlying constructs of knowledge followed by reconstruction of knowledge perspectives. Our own perspective and stance as researchers and educators is to use critical reflection as a means of facilitating students' awareness and knowledge of their practice and learning epistemologies. Bleakley (1999) suggested that highlighting the theoretical background of critical reflection provides a means to interrogate the rigour and relevance of critical reflection as a process in clinical practice, and facilitates identification of how it articulates with other philosophical underpinnings of clinical practice and education. This perspective informed the development and analysis of the effects of our critical reflection program.

The critical reflection program: context and participants

The research was undertaken at an Australian University, School of Physiotherapy. Participants were from the third year of a four-year undergraduate program. In their third year, students move from two years of a university-based curriculum to their first clinical placement experience comprising three, six-week placement blocks, in large metropolitan teaching hospitals. We considered this to be a significant point in students' undergraduate clinical education because it is a time when learning expectations change, from theory and research driven knowledge about physiotherapy practice (delivered in the first two years via a university based, combined problem based learning and lecture format), to clinical bedside and less structured teaching and learning.

Figure 1 provides an overview of the research design and how the critical reflection program formed a component of the overall research. The critical reflection program was introduced as a separate program in the students' clinical education format. Due to the logistics of changing timetables, decreasing the hours available for their usual clinical skills program and availability of a facilitator with experience and knowledge of teaching critical reflection, the program was only offered in one of the clinical hospitals. All

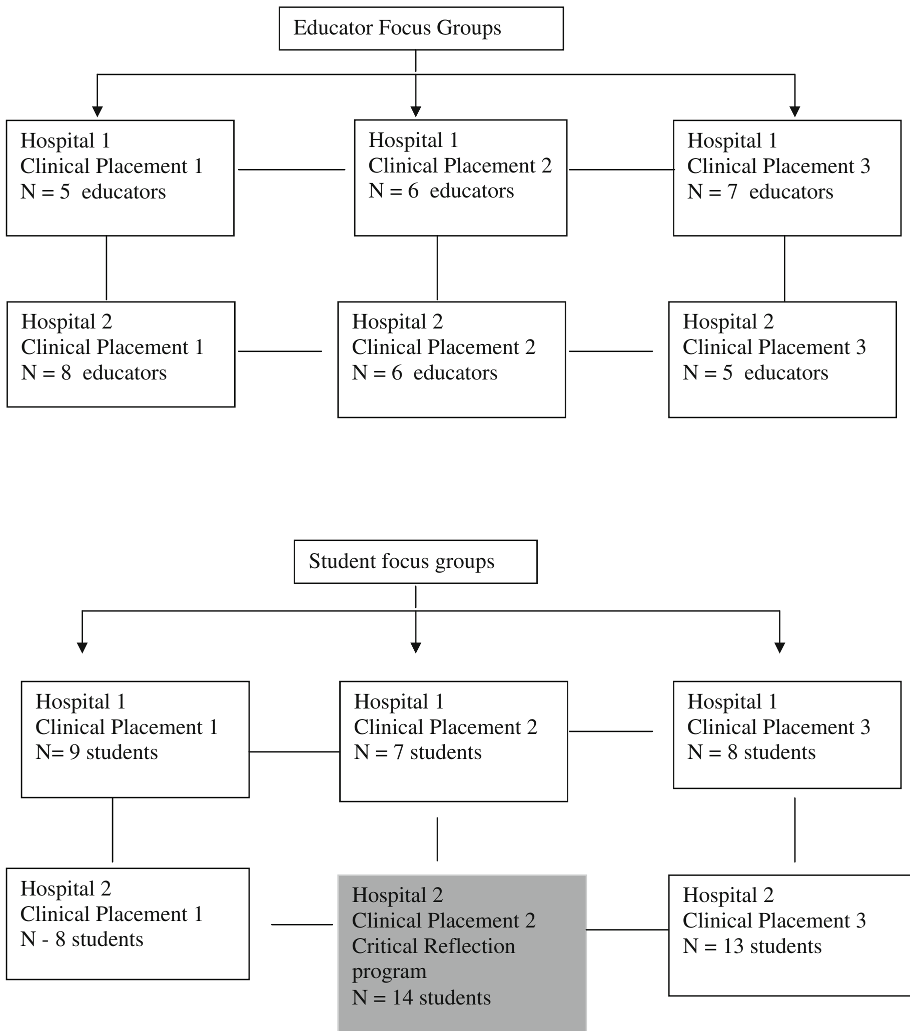

Fig. 1 Overall research framework

students ($n = 14$) attending their second six week clinical placement block in one teaching hospital participated in the critical reflection program. This group of students represented a sample of convenience (Mellion and Tovin 2002; Johnson and Waterfield 2004). They were all at the same level of education and available to attend the program as a component of their clinical education. All students provided their informed consent to participate in the program. The program consisted of a three hour per week discussion session over a period of six weeks. The program facilitator (DW) is a physiotherapist who had completed postgraduate study in the area of critical reflection skills.

Each participating student received a handbook about the critical reflection program. The handbook provided a brief discussion of the theoretical basis of critical reflection and a rationale for why it was important within the context of learning clinical skills. In addition, there was an outline of the weekly program, including the ground rules of participation

Table 1 Ground rules for participating in the critical reflection program

Ground rules for critical reflection classes
1. Do not be tempted to solve problems
2. Be open minded
3. Contribute wholeheartedly
4. Be non-judgemental
5. Disclosures within the process of reflection are confidential
6. Each person has the right to privacy

(Table 1). The ground rules were designed to both reflect and support the theoretical premises underlying our program, of reflexivity, recognising multiple realities and being critically conscious of effects of power in teaching and learning practices. As participants in the reflective program, students were encouraged to adopt attitudes of open mindedness, wholeheartedness and responsibility to enable them to openly explore their experiences in some depth, prior to discussing alternate actions and solutions (Baird and Winter 2005). Ethics approval for the study was obtained from the Departmental Human Research Ethics Committee at the University of Melbourne.

The specific aims of the research were to examine how this group of students reflected within the critical reflection program and how their reflections and feedback about the program intersected with the data about experiences of learning over 12 weeks of clinical placement in the third year undergraduate program of physiotherapy (Fig. 1).

Research design

In order to gain insight into how students understood the place of critical reflection within their program of learning clinical skills, we adopted an interpretive research design drawing from the methodological standpoint of interpretivism, and the related method of constructivism (Rice and Ezzy 1999; Schwandt 2000). The central goal of interpretivism is to interpret the social world by searching for and articulating meanings, beliefs and values (Higgs, 2001a). The related methodology of constructivism similarly privileges the way a person describes, interprets and builds knowledge from experience (Patton 2002). Underlying this research design is the assumption that students who participated in the critical reflection program would engage in a process of interpreting, finding meanings and constructing links with their experiences of clinical education. Within this design, our role as researchers was to take students' explanations of meanings and interpret them as a source of knowledge about factors influencing their learning.

The critical reflection program: theoretical approach

Our critical reflection program was developed on the premise that reflection involves systematically deconstructing incidents to expose what Fish and Twinn (1997, p. 52) refer to as 'the roots and processes of action', in order to build new or different (perhaps transformative) perspectives and actions. As detailed above, the program was informed by three underlying theoretical explanations of reflective practice (Fook 2004). From the perspective of reflexivity, students were encouraged to 'reflect on their own practice'; to be

reflexive about their own perspective and adopted positions as a 'learner' or 'practitioner'. The lens of postmodernism was used to encourage students to deconstruct meanings, positions, knowledge and practices, and critical theory provided the strand through which students might recognise different forms of power and develop ways of challenging and changing their practice.

We aimed, through the program to assist each student to understand their own individual approach to practice and to provide a framework through which to negotiate the complex nature of professional practice. Through deconstruction of an event it was hypothesised the students might explore different knowledge bases (theoretical, experiential and personal); socio-cultural influences and their own emotional responses. By exploring each student's premise for action and then checking for validity from other members of the group, it was anticipated the collective knowledge of the peer group would act to either validate or offer a gentle critique of the underlying constructs of the participating students and importantly, assist in highlighting alternate perspectives.

The theories of knowledge and methods of reflecting on knowledge provided the theoretical platform from which the following aims were developed. They were to:

- Provide students with space and time to examine individual processes of learning within clinical placements.
- Provide a framework for illuminating the processes of clinical decision making by drawing attention to the way that decision making is influenced by the knowledge domains, ideas and values that underpin practice.
- Draw attention to the influence of underlying drivers of learning (personal understanding and motivations, values and practice principles).
- Highlight different ways of knowing and learning about physiotherapy practice.

Accordingly the specific learning objectives were, that by the end of this program, students would:

- have some knowledge of the theory underlying the development and practice of critical reflection
- have a clear understanding of the critical reflection process and how to apply critical reflection in the clinical setting
- be able to use critical reflection to inform and guide their clinical decision-making
- be able to use critical reflection to aid the integration of theoretical concepts to clinical treatments
- be able to make links between processes of critical reflection and their experience of learning clinical skills.

In each session, students were asked to bring a critical incident from their clinical placement learning to the group. They were then guided through a process of deconstructing the underlying knowledge, values and assumptions upon which their knowledge and interpretation of their knowledge was based (Boud et al. 2006) (Table 2). This process of critical reflection involved identifying the elements that underpinned each student's critical incident, including their emotions, thoughts and any actions they took. Following identification of the elements, students were guided through a process of examining underlying their beliefs, values and assumptions acting in their event. This was designed to draw attention to their personal ways of understanding and approaching learning situations so that their validity and transferability to other situations could be made explicit. In the final session, the group was encouraged to explore the collective learning, degree of similarity of themes and relevance of critical reflection to practice.

Table 2 Stages of critical reflection

Overview of stages	Questions within stages
Week1 Facilitator to explain the concept of critical reflection and model the process with an example which the group assist in analysing *Stage 1 Week 2* Each participant will bring a description of an event to share with the group The group will seek to clarify the narrative	*Stage 1 Narrative* Describe in detail your event Give the context of the event Who were the participants and what were their roles? Include thoughts and feelings that happened at this time Any observed responses, emotion, verbal and non verbal communication
Stage 2 Week 3 Each person will identify the elements that underpin each person's event, including emotions, thoughts, and actions The group will explore the elements and refer back to the original event to ensure all the themes have been explored By the end of this stage each event will have clearly defined elements N.B. Group culture applies	*Stage 2 Deconstruction* In this stage we explore the elements To ensure the group has fully understood it can be helpful to check any ambiguity e.g., When you said X did you mean….? What was going on for you? How did you feel? What were you thinking? Why choose one action over another? How did you feel after? How come? Turn the event around and look at it from the other participants perspective. What could have been going on for them?
Stage 3 Week 4 From the elements each person will identify the underlying belief, values and assumptions acting in their event The group will explore any contradictions or lost themes from the previous stage	*Stage 3 Identification of underlying values* Further exploration is used to identify underlying assumptions, value systems and beliefs in operation at the time of the event These may not be what you expected, i.e., if asked you would have said those could never be your values. It can be a light bulb moment!
Stage 4 Week 5 Each person will discuss the values exposed, their validity and transferability to other situations Identify and reason any changes to be made and how this might be expected to change the play of the original incident	*Stage 4 Checking the relevance of these assumptions* Do these assumptions fit with your espoused theory of self/practice? Are they relevant and appropriate to you? Do they need modifying? What modifications would you make? How would the event play out if these new theories of practice had been in place?
Final Stage Week 6 Group to explore the collective learning, degree of similarity of themes, relevance of critical reflection to practice Individuals to summarise learning from process Group evaluation and feedback and focus group discussion	*Final Stage; putting new theories into practice and on going evaluation* What did you learn through this process? What does the process of critical reflection mean to you? How is it relevant to your clinical placement? How can we sustain Critical Reflection from here?

Data collection

Evaluation of the critical reflection program was aimed at examining its effect on students' overall experience of learning in their clinical placement; its congruence with the expectations of clinical education as a means of preparing students to be independent and

autonomous clinical practitioners and whether it was effective in achieving its stated aims. Three sources of data informed the evaluation of the program:

1. Written memos and impressions of student reflections and learning were noted at the completion of each session by the reflective practice group facilitator.
2. A focus group discussion at the completion of the critical reflection program
   - In the focus group discussion, students were asked to comment on how the critical reflection program had affected their experience of learning in clinical practice.
   - The focus group was one hour in length and was facilitated by an experienced focus group facilitator who was not a physiotherapist or otherwise involved in the research or critical reflection program. The focus group discussion was recorded and transcribed in full.
3. Written feedback from participating students.
   - The written feedback form was a component of the students' critical reflection manual. Questions were directed toward the stated aims of the program and to what extent students thought those aims had been achieved. Students were also asked for their overall rating of the usefulness of the program as a stand alone component of learning clinical skills.
   - Written feedback from students via e-mail about any carry over impact of their participation in the critical reflection program 6 weeks later (following their third clinical placement).

Data analysis

All sources of data from the critical reflection program were analysed using the inductive process of thematic analysis and relied upon the theoretical framework of grounded theory (Strauss and Corbin 1990). This involved the reflective group facilitator (DW) and the primary researcher (CD) working together to initially categorise the learning incidents that students raised within the critical reflection program. These initial descriptive categories were then developed into themes of student reflection. The focus group data were similarly recorded and transcribed then thematically coded and analysed by CD and DW.

Two main tenets of grounded theory guided the analysis of the students' written responses and focus group transcript data. The first concerned the systematic and structured way of engaging with the data by means of coding and building conceptual understanding through data categorisation and analysis (Strauss and Corbin 1990). The second concerned grounded theory's emphasis on the interplay and constant comparison between the data itself and the analytic process guided by explanatory theories. In this research, the iterative analysis (Rice and Ezzy 1999; Charmaz 2000; Kennedy and Lingard 2006) involved CD and DW working together via e-mail discussion to develop conceptual explanations of students' critical reflection. This was achieved by moving between and comparing themes derived from students' discussions and written feedback; theories of critical reflection, and theories of physiotherapy practice epistemology and knowledge generation. Themes from the focus group (data source 2) and students' written feedback (data source 3) were collapsed into one overall data set. These themes were also compared with the findings of students' experiences of learning in clinical placements over each of their 3 placements (Delany 2007).

Findings

Data source 1: written memos and impressions of learning recorded by the reflective practice group facilitator

Two overall themes emerged from the observations, notes and memos made by the facilitator after each of the critical reflection sessions. The first concerned students' critical reflection discourse (what they bought as critical incidents and how they were discussed and critically analysed). The second was the nature and progression of student learning within the sessions.

Students raised the following types of issues as critical incidents in the critical reflection program:

- Recognising and implementing ethical practice.
- Building professional relationships with patients.
- The impact of context, power and their emotional response on professional communication.
- Varying levels of confidence and self esteem as a student professional.
- Implicit power relations in all interactions in the healthcare context.
- The need to balance patient and supervisor expectations, theoretical knowledge, and the views of other health professionals.

Students' discourse within the six sessions focused on the significant impact and role of power that was implicitly and explicitly demonstrated within their relationships with their clinical supervisors and within the broader sphere of hierarchical healthcare settings. They highlighted their awareness of the dual roles of supervisors as both their assessors and facilitators of their learning. This was recognized as a source of tension for students because in seeking help or advice from their educators, the students felt they might reveal a lack of knowledge that might adversely impact on their overall result. This in turn, meant they needed to appear confident and knowledgeable to improve their supervisor's feedback and ultimate grading for the clinical placement.

Students gave examples of incidents where they observed patient disempowerment through either the broad hospital culture or through attitudes of different healthcare providers. They expressed uncertainty about how they should deal with these observations. Analysing these incidents as part of the critical reflection process involved identifying each person's perspective and possible responses, deciding on appropriate strategies of dealing with emotional reactions and negotiating outcomes with the people involved.

For example, one (positive) critical incident brought to the discussion group concerned an interaction with a surgeon and three of the physiotherapy students. The students reported how they were surprised and impressed with his approachability, how he included them as valid members of the health care team and how, as a consequence, they felt empowered to ask questions and felt more supported and confident in their role as students. Through the process of critical reflection of this incident, students were encouraged to examine and identify why and how this incident had affected their learning. The discussions centred on how the surgeon's actions stood against the dominant hierarchy of health practice. The students identified the surgeon's approachability as an anomaly in their experience to date and to their expectations. The students noted how the surgeon's demeanour, verbal and non verbal communication made them feel comfortable in approaching him to discuss patient care and ask questions. The students also saw the surgeon's approachability as a model to emulate within their own practice. An outcome of this learning analysis was that the students proposed to approach the surgeon to thank him for his positive contribution to their learning, and to encourage similar future interactions with other students.

The second theme from the facilitator's notes and observations highlighted processes of student learning. Students' critical learning incidents did not focus on the achievement of assessable competencies, or gaps in their theoretical knowledge, but rather on other facets of learning. For example, students recognised that for successful learning, they needed to put on a 'professional mantle' of appearing confident and certain with patients, and being able to contribute as a 'player' within multidisciplinary team meetings. They also spoke of uncertainty in how they should position themselves to contribute to or learn from this environment given that they were aware of the constraints of a structured curriculum that valued achieving measurable competencies and learning outcomes. Through their analysis of incidents, they demonstrated an awareness of the dynamic nature of the learning process on clinical placements, but in so doing, they found that the imposed structure and their position as students within the hierarchy often prevented them from participating in the same dynamic way.

Within the group, varying degrees of engagement with the process of critical reflection were noted, on occasion, manifesting as stalled reflection or non-engagement with other perspectives. The group as a whole noted these occurrences and drew attention to them, exploring the elements of the stalled reflection whilst adhering to the group rules of mutual respect, support and the right of any individual to call a halt to the process.

Data source 2: a focus group discussion and students' written feedback

The following quote encapsulates the three main themes to emerge from the analysis of students' written and verbal feedback following their participation in the critical reflection program:

> I found the sessions really useful as a kind of bonding experience between students and it gave us a forum to discuss clinical experiences without sounding like we were just complaining. It also gave us time to reflect on the good and bad parts of clinic and on how we learn best. It was lovely to have a bit of a break from clinic but at the same time I feel I would have benefited from more time with patients.

The three themes were:

1. Validation and sharing.
2. A break in clinical performance and
3. Spheres of knowledge.

The majority (12 of the 14) students reported that the critical reflection program was a worthwhile tool and that it provided a broader way of thinking about their clinical learning. They also identified the process of critical reflection to be a separate process from their other clinical skills learning and that greater integration with the whole clinical learning program would enhance its usefulness. Two of the fourteen students gave consistently negative feedback and reported that they were already reflective in their approach and did not need to go through a formal process.

Theme 1: Validation and sharing

Students gave positive feedback about the critical reflection program as a forum for 'sharing problems', bouncing learning strategies off each other and hearing other students' stories. Exchanging experiences and information about their learning in what students regarded as a

'safe' environment, that is one that did not concurrently involve potential assessment of their knowledge, was regarded as a useful addition to learning in their clinical placement:

> Yeah, to know that you're not the only person who feels that way and being validated

> I just think the main thing I took out of it was not my own reflection it's just the cases of everybody else's. And just how they dealt with the situation and I don't know, I think that process of knowing how somebody else has done it and being able to bring that into your own experience is good

> Yes! We all could learn and try new techniques by discussing other students problems

> Listening to other students stories was very interesting and their talking about what each participant in the story would have felt etc

An important aspect of students' reports of a 'safe environment' was that the program was facilitated by a person who was not involved assessing their progress.

> It was just a really good environment with someone who wasn't a supervisor that we could just generally talk about concerns and although we didn't necessarily go into practice, it was still nice to know that we were all on the same page and we identified similar issues

Related to this theme of an environment of support and safety was that students welcomed the break from the demands of clinical learning performance.

Theme 2: a pause in clinical performance

The break afforded by the reflection program was seen by students as a time to pause and consider less structured ways of managing and learning from their clinical placement program.

> It was a good break from the rest of clinic as it was time to stop trying to remember numbers and which supervisor prefers what kind of behaviour and just concentrate on finding a place for all the learning in the scheme of things. Time to sort all the thoughts we have about clinic out.

> I enjoyed the break from being… I really like being a physio and I like seeing patients and things but I quite like the chance to be at clinic but not under supervision and it's a break and I really like that

However, the 'break' also highlighted the fact that having an opportunity to be reflective as a structured and stand alone component of their clinical placement program, was difficult to sustain and integrate with other components of the program. Students felt they may not continue to practice critical reflection as there was not a culture of reflective practice built into the structure of the clinical placement program. For example, 6 weeks after participating students commented that:

> I didn't really think about doing critical reflection by myself in this last placement. Also I was short of time and too preoccupied with preparing for the next day to sit down and think about what had happened that day.

> In my third clinic block I didn't really use these skills as overtly as in the 2nd block, or as regularly. I was still doing some reflection on what had occurred that day (or

> week) but not breaking each scenario down as much as was done during the "Critical reflection" sessions. Probably due to a lack of enthusiasm for it and a lack of energy. At the end of each day I was more looking forward to getting home and unwinding. There didn't seem to be enough reward for the effort—and I guess I just forgot about it too. Also a lack of supervisor training in reflective practice so there was no reinforcement or facilitation on placement.

These comments highlight that taking time out to think about particular learning experiences, needs ongoing reinforcement and integration with the clinical education program as a whole.

Theme 3: Spheres of knowledge

Students' feedback about the program highlighted both their recognition and increased awareness of the influence of different spheres or types of knowledge that contributed to their learning on clinical placements. It is this theme that underpins the title of this paper. Students' feedback demonstrated that they had become engaged in the process of examining their reactions, responses and ways of thinking about people and their perspectives, in addition to the more explicit and common categories and sources of knowledge such as physiotherapy theory:

> (The program)…seems to highlight knowledge deficits outside of physiotherapy theory knowledge such as social and emotional aspects of patients and ourselves (that, is, not course work).

> Much more reasoning behind practical aspects was revealed and also added insight into supervisors' roles and thoughts.

> By going into a situation in such detail I could see errors of judgment and ways that problems could have been solved.
> By following thought processes, to the underlying assumptions it was easier to see why I thought that and sometimes questioning the validity of those assumptions.

Exposing new spheres of knowledge seemed to be a lasting effect of participation in the program. When students were asked about any carryover effects of the critical reflection program 6 weeks after participating, (and at the completion of their final clinical placement), 8 of the 14 participants reported that the program had been useful to their learning:

> Being shown/taken through ways of figuring out the behaviour of others and ourselves is a valuable tool and since we work with people of all types everyday I think it is really really important to possess skills that enable us to communicate well with them in order to make the right decisions. Not only with patients but colleagues too. I found that now when I communicate with people I am more open to possibilities…. hmmm I guess I mean that *I am more aware of where they may be coming from* and find it easier to explain to others why I am making a particular decision. I can easily recall and explain most if not all of the factors affecting my decisions and am more aware of what may be influencing the decisions of others.

Two of the fourteen students consistently reported that the program was of little benefit, although even within this negative feedback, the students demonstrated that they had become more reflexive about their processes of learning:

> I did use the skills of critical reflection in my clinical practice, however unfortunately, I don't feel that this was a direct result of the sessions. I have been critically reflecting on my practice since before the sessions were introduced. Nonetheless, an example how I used the skills is that I would look at situations from the patients point of view and used the information to guide my actions and behaviours towards them (e.g. listening and showing that I cared about their circumstances, which helped to gain trust and compliance with treatment).

In summary the positive results of the critical reflection program from students' perspectives and feedback were that it provided them with increased confidence in their clinical learning; it validated their personal role and perspectives in clinical learning; it was enjoyable and it provided a 'safe' forum for sharing and bonding with other students. The negative aspects were that it was separate to the focus and emphasis of the other components of their clinical learning, and the discussions were sometimes slow and repetitive.

Discussion

This research has provided a description of a theoretically based program of critical reflection introduced as a component of a group of physiotherapy students' first clinical placement. The research findings provide some empirical evidence that critical reflection as a program of learning has relevance to the experiences of learning in the clinical education program for undergraduate physiotherapists.

Students' sense of validation and increased empowerment as a result of their participation in the critical reflection program is an important outcome and resonates with findings from the wider research project (Delany 2007); previous studies that have recognised students' need for inclusion within their communities of practice (Lave and Wenger 1990), and the significance of confidence or lack of confidence as a determinative influence in learning clinical skills (Wessel and Larin 2006; Williams 2002). Their concerns with managing relationships with educators, patients and other members of the healthcare team were explicitly acknowledged and validated within the critical reflection program. Although the critical reflection program did not alter the structure, environment and overarching organisation of learning in a busy public hospital, it provided students with an underlying understanding and perspective of their position within it. Understanding organisational and educational structure is a recognised source of empowerment (Gard 2000).

From a broader perspective, the underlying tenets of our critical reflection program, to value different perspectives, to be reflexive about one's own professional practice, and to be prepared to challenge and change existing structures and powers, offers an opportunity to develop the physiotherapy clinical education discourse. The program provides a potential bridge to link and broaden the well established framework underpinning clinical reasoning skills, of systematic and rational justification for clinical decisions and integration of multiple perspectives and complexity when making clinical decisions (Edwards et al 2004, Loftus and Smith 2008), with a similar systematic and multidimensional framework of deconstructing and examining values, perspectives, positions and power in critical reflection. Both processes provide new knowledge, understanding and professional empowerment. The combination of the frameworks has the potential to widen the definition of evidence-based practice to

include not just empirically obtained (and measured) knowledge but also the contextual framework and multiple perspectives that are part of healthcare practice. This combination provides a broader epistemological basis to better prepare physiotherapists and other health professionals to work and contribute in uncertain, complex and hierarchical health care settings.

Higgs and Titchen (2001) outline a number of strategies that are necessary to reframe the interface between an uncertain world of professional practice and the necessary focus and content of professional knowledge and education. They include:

1. Developing a greater (and more critical) understanding of professional knowledge.
2. Being attentive to personal and professional values and understanding underpinning health care practice.
3. Generating theories of knowledge derived from practical experience.
4. Incorporating practice knowledge into educational curricula so that students receive preparation for professional work from both propositional (factual) and emerging practice knowledge (experiential).

These strategies of valuing different sources of knowledge and raising awareness of alternative perspectives and understandings were identified by students, as outcomes of participation in the critical reflection program. Students demonstrated increased awareness of different perspectives that might contribute to their understanding of a learning situation. They generated theories of practice based on critical deconstruction of underlying personal and practice assumptions and they participated in a process of attending to personal and propositional understandings of clinical scenarios. These results suggest that critical reflection programs that draw from and model the use of multiple theoretical perspectives, (in our program- postmodernism, critical theory and reflexivity), may be a necessary inclusion in health practice curricula that aims to prepare students for recognizing their own professional identity and negotiating clinical uncertainty.

A further important outcome of the critical reflection program was that, for those students involved, there was no evidence that their participation in the program adversely affected their clinical assessment results at the conclusion of the six week placement. In this research, student assessment results were not proposed as an outcome measure of the success or otherwise of the critical reflection program. However, the outcome that students were able to participate in the three hour per week program without negatively affecting the results of their clinical skills assessment, potentially demonstrates that the program has advantages in contributing to student learning in a less resource intensive way than that of supervised ‘bedside’ learning. Future research is needed to focus on a range of ways to gauge or measure the impact of a critical reflection program on student results in clinical skill assessment tasks.

A key aspect of the critical reflection program was that the facilitator was a physiotherapist who was not involved in assessment of participating students. This distance or separation of roles removed a significant source of tension for students, that of being both supported and assessed in their clinical learning by the one person. Eraut (1994) similarly identifies challenges to adopting critical reflective processes within clinical education settings, suggesting that it is not always easy to put aside the rivalries and micro-politics of the workplace for the purposes of constructive reflection. The personal and social risk of reflecting publicly about concerns or work experiences requires a supportive and trusting audience.

Limitations and further research

Students identified 3 main limitations of, or ways the critical reflection program might be refined:

1. The pace of the critical reflection program should be flexible enough to allow students to deconstruct and analyse critical incidents and then develop related learning strategies at a pace that suits the whole group, rather than being dictated by the structure of the program.
2. Whilst there were clear learning benefits from their participation, the benefits diminished without ongoing practice and support from their clinical educators. Clinical educators need to be provided with theoretical knowledge, academic support and skills in the area of critical reflection.
3. Ideally, critical reflection facilitators should be either health professionals or academics, who are not directly involved in supervision and assessment of students. In addition to the facilitator not being involved in assessment, this approach provides a potentially beneficial link between the teaching institution and the clinical placement site.

Other limitations of the research arise from the fact that only 14 physiotherapy students participated in the critical reflection program and that these participants were Australian physiotherapists. Whilst this limits direct generalisability to other cultural contexts and health professions, the details of the program including the theoretical premises and the extensive use of participants' words enables readers to infer relevance and applicability to the aims, identity and work settings of their professional learning and practice. It may also have been useful to compare the issues raised by participating students with those who did not participate in the critical reflection program to more clearly account for the influence and effects of the program. Further research is needed to map the dimensions of critical reflection in clinical practice and its relationship to other areas of health care practice skills and knowledge frameworks. More specifically, examination of the short and long term effects of incorporating critical reflection skills in learning and clinical practice need to be assessed and related to specific methods of teaching.

Summary and recommendations

This research demonstrates that for critical reflection to be integrated within clinical education, there needs to be a shift in the curriculum that involves both time and support to include the skills of critical reflection as an explicit component of professional clinical learning. In the area of clinical reasoning, Ryan and Higgs (2008, p. 382) suggest that key educational questions need to be related to educational theory and principles, so that a sense of coherence is developed between the 'intention, guiding principles, design, implementation and evaluation of the curricula.' This research provides one means of developing such coherence between the theories and guiding principles underpinning critical reflection and the teaching methods to integrate it into the clinical education curriculum.

Practical strategies include reviewing the clinical education programs to identify how periods of both self-directed and facilitator-led critical reflection programs might be included; providing lectures or course materials that cover the theory, structure and purposes of critical reflection prior to attending their clinical placements and identifying and

training staff to perform roles of facilitating critical reflection. These strategies, although challenging from a resource perspective, provide an opportunity for interdisciplinary collaboration. For example, there is no reason why an occupational therapist could not act as the critical reflection facilitator for a group of physiotherapy students and vice versa.

Conclusions

This research examined the effects of a three hour per week small group critical reflection program for physiotherapy students on their first six week clinical placement. The critical reflection program was grounded in knowledge paradigms of postmodernism, reflexivity and critical theory. Students' critical reflection discourse within the program focused on notions of power, hierarchies, connecting with others and relationships, and not on learning core technical competencies in clinical practice. The three themes to emerge from student feedback about the program were a sense of validation and sharing; a useful break in their clinical performance and a broadening of their spheres of knowledge. The common thread in these themes is an expression of the significance for students to be valued, and to feel connected and confident as a learner. This thread resonates with students' overall experiences of learning in clinical placements. It highlights how critical reflection intersects with corresponding epistemological frameworks of clinical reasoning in physiotherapy practice and it therefore provides some evidence for the inclusion of critical reflection as a valid and worthwhile component of early clinical education.

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References

Baird, M., & Winter, J. (2005). Reflection, practice and clinical education. In M. Rose & D. Best (Eds.), *Transforming practice through clinical education, professional supervision and mentoring* (p. 156). Edinburgh: Elsevier.

Barry, C., Britten, N., Barber, N., Bradley, C., & Stevenson, F. (1999). Using reflexivity to optimise teamwork in qualitative research. *Qualitative Health Research, 9*, 26–44. doi:10.1177/104973299129121677.

Bleakley, A. (1999). From reflective practice to holistic reflexivity. *Studies in Higher Education, 24*, 315–330. doi:10.1080/03075079912331379925.

Bleakley, A. (2006). Broadening conceptions of learning in medical education: The message from teamworking. *Medical Education, 40*, 150–157. doi:10.1111/j.1365-2929.2005.02371.x.

Boenink, A., Oderwald, A., De Jonge, P., Van Tilberg, W., & Smal, J. (2004). Assessing student reflection in medical practice. The development of an observer-rated instrument: Reliability, validity and initial experiences. *Medical Education, 38*, 368–377. doi:10.1046/j.1365-2923.2004.01787.x.

Boud, D., Keogh, R., & Walker, D. (1985). *Reflection: Turning experience into learning*. London: Kogan Page.

Boud, D., Cressey, P., & Docherty, P. (2006). Setting the scene for productive reflection. In D. Boud, P. Cressey, & P. Docherty (Eds.), *Productive reflection at work*. London: Routledge.

Charmaz, K. (2000). Grounded theory Objectivist and constructivist methods. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 509–537). Thousand Oaks, CA: Sage Publications.

Clouder, L. (2000). Reflective prctice: Realising its potential. *Physiotherapy, 86*, 517–522. doi:10.1016/S0031-9406(05)60985-6.

Cole, K., Barker, R., Kolodner, K., Williamson, P., Wright, S., & Kern, D. (2004). Faculty development in teaching skills: An intensive longitudinal model. *Academic Medicine, 5*, 469–480. doi:10.1097/00001888-200405000-00019.

Cross, V. (1997). The professional development diary: A case study of one cohort of physiotherapy students. *Physiotherapy Research Report, 83*, 375–383.

Delany, C. (2007). Critical reflection program for third year physiotherapy students, Victorian Government Department of Human Resources; Clinical Placement Innovation Projects. http://www.health.vic.gov.au/workforce/placements.htm. Accessed May 2008

Donaghy, M., & Morss, K. (2000). Guided reflection: A framework to facilitate and assess reflective practice within the discipline of physiotherapy. *Physiotherapy Theory and Practice, 16*, 3–14. doi:10.1080/095939800307566.

Dornan, T., Boshuizen, H., King, N., & Scherpbier, A. (2007). Experience-based learning: A model linking processes and outcomes of medical students' workplace learning. *Medical Education, 41*, 84–91. doi:10.1111/j.1365-2929.2006.02652.x.

Dye, D. (2005). Enhancing critical reflection of students during a clinical internship using the s.O.A.P. Note. *The Internet Journal of Allied Health Sciences and Practice, 3*.

Edwards, I., Jones, M., Carr, J., Braunack-Mayer, A., & Jensen, G. (2004). Clinical reasoning strategies in physical therapy. *Physical Therapy, 84*, 312–330.

Eraut, M. (1994). *Developing professional knowledge and competence*. London: Falmer Press.

Fish, D., & Twinn, S. (1997). *Quality clinical supervision in the health care professions*. Oxford: Reed Educational and Professional Publishing.

Fook, J. (2002). Theorising from practice. *Towards an inclusive approach for social work. Qualitative Social Work, 1*, 79–95. doi:10.1177/1473325002001001746.

Fook, J. (2004). Critical reflection and transformative possibilities. In L. Davies & P. Leonard (Eds.), *Social work in a corporate era: Practices of power and resistance*. Ashgate: Aldershot.

Francis, D. (1995). The reflective journal: A window to preservice teeachers' practical knowledge. *Teaching and Teacher Education, 11*, 229–241. doi:10.1016/0742-051X(94)00031-Z.

Gard, G. (2000). Stress prevention in an organisational context. A challenge for the physiotherapist. *Nordisk Fysioterapi, 4*, 1–5.

Gardner, F. (2003). Critical reflection in community-based evaluation. *Qualitative Social Work, 2*, 197–212. doi:10.1177/1473325003002002005.

Grace, A. (1997). Where critcal postmodern theory meets practice: Working in the intersection of instrumental, social and cultural education. *Studies in Continuing Education, 19*, 51–70. doi:10.1080/0158037970190102.

Habermas, J. (1990). *Moral consciousness and communicative action*. Cambridge: MIT Press.

Hansen, E. (2006). *Successful qualitative health research*. Sydney: Allen and Unwin.

Henderson, P., & Johnson, M. (2002). An innovative approach to developing the reflective skills of medical students. *BMC Medical Education, 2*.

Higgs, J. (2001). Charting standpoints in qualitative research. In H. Byrne-Armstrong, J. Higgs, & D. Horsfall (Eds.), *Critical moments in qualitative research* (pp. 44–67). Oxford: Butterworth Heinemann.

Higgs, J., & Titchen, A. (2001). Rethinking the practice-knowledge interface in an uncertain world: A model for practice development. *British Journal of Occupational Therapy, 64*, 526–533.

Higgs, J., Jones, M., Loftus, S., & Christensen, N. (Eds.). (2008). *Clinical reasoning in the health professions*. Amsterdam: Elsevier Butterworth Heinemann.

Howell, J. (1989). The reflective practitioner in nursing. *Journal of Advanced Nursing, 14*, 824–832. doi:10.1111/j.1365-2648.1989.tb01467.x.

Hughes, J., & Sharrock, W. (2007). *Theory and methods in sociology. An introduction to sociological thinking and practice*. New York: Palgrave Macmillan.

Iedema, R., Degeling, P., Braithwaite, J. & Chan, D. (2004). *Medical education and curriculum reform: Putting reform proposals in context Medical Education Online* (p. 9).

Jensen, G. (2005). Mindfulness: Applications for teaching and learning in ethics education. In R. Purtilo, G. Jensen, & C. Brasic Royeen (Eds.), *Educating for moral action*. Philadelphia: F.A. Davis Company.

Jensen, G., Shepard, K., & Hack, L. (1990). The novice versus the experienced clinician: Insights into the work of the physical therapist. *Physical Therapy, 70*, 314–323.

Jensen, G. M., Gwyer, J., Shepard, K. F., & Hack, L. M. (2000). Expert practice in physical therapy. *Physical Therapy, 80*, 28–43.

Johns, C. (1995). Framing learning through reflection within carper's fundamental ways of knowing in nursing. *Journal of Advanced Nursing, 22*, 226–234. doi:10.1046/j.1365-2648.1995.22020226.x.

Johnson, R., & Waterfield, J. (2004). Making words count: The value of qualitative research. *Physiotherapy Research International, 9*, 121–131. doi:10.1002/pri.312.

Kember, D. (2001). *Reflective teaching and learning in the health professions*. Oxford: Blackwell Science.
Kennedy, T., & Lingard, L. (2006). Making sense of grounded theory in medical education. *Medical Education, 40*, 101–108. doi:10.1111/j.1365-2929.2005.02378.x.
King, P., & Kitchener, K. (1994). *Developing reflective judgment*. San Francisco: Jossey-Bass.
Larin, H., Wessel, J., & Al-Shamlan, A. (2005). Reflections of physiotherapy students in the united arab emirates during their clinical placements: A qualitative study. *BMC Medical Education, 5*.
Lave, J., & Wenger, E. (1990). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
Loftus, S., & Smith, M. (2008). A history of clinical reasoning research. In J. Higgs, M. Jones, S. Loftus, & N. Christensen (Eds.), *Clinical reasoning in the health professions*. Amsterdam: Elsevier Butterworth Heinemann.
Maudsley, G., & Strivens, J. (2000). Promoting professional knowledge, experiential learning and critical thinking for medical students. *Medical Education, 34*, 535–544. doi:10.1046/j.1365-2923.2000.00632.x.
McLeod, S., Romanini, J., Cohn, E., & Higgs, J. (1997). Models and roles in clinical education. In L. McAllister, M. Lincoln, S. Mcleod, & D. Maloney (Eds.), *Facilitating learning in clinical settings*. Cheltenham: Stanley Thornes.
Mellion, L., & Tovin, M. (2002). Grounded theory: A qualitative research methodology for physical therapy. *Physiotherapy Theory and Practice, 18*, 109–120. doi:10.1080/09593980290058490.
Patton, M. (2002). *Qualitative research and evaluation methods*. California: Sage Publications.
Pease, R., & Fook, J. (1999). Postmodern critical theory and emancipatory social work practice. In R. Pease & J. Fook (Eds.), *Transforming social work practice* (pp. 1–22). London: Routledge.
Pee, B., Wodman, T., Fry, H., & Davenport, E. (2002). Appraising and assessing reflection in students' writing on a structured worksheet. *Medical Education, 36*, 575–585. doi:10.1046/j.1365-2923.2002.01227.x.
Rees, C. (2004). The problem with outcomes-based curricula in medical education: Insights from educational theory. *Medical Education, 38*, 593–598. doi:10.1046/j.1365-2923.2004.01793.x.
Rice, P., & Ezzy, D. (1999). *Qualitative research methods. A health focus*. Oxford: Oxford University Press.
Richardson, G., & Maltby, H. (1995). Reflection-on-practice: Enhancing student learning. *Journal of Advanced Nursing, 22*, 235–242. doi:10.1046/j.1365-2648.1995.22020235.x.
Routledge, J., Willson, M., McArthur, M., Richardson, B., & Stephenson, R. (1997). Reflection on the development of a refective assessment. *Medical Teacher, 19*, 122–128.
Ryan, S., & Higgs, J. (2008). Teaching and learning clinical reasoning. In J. Higgs, M. Jones, S. Loftus, & N. Christensen (Eds.), *Clinical reasoning in the health professions* (pp. 379–389). Amsterdam: Elsevier Butterworth Heinemann.
Schwandt, T. (2000). Three epistemological stances for qualitative inquiry. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 189–214). Thousand Oaks: Sage.
Shepard, K., Hack, L., Gwyer, J., & Jensen, G. (1999). Describing expert practice in physical therapy. *Qualitative Health Research, 9*, 746–758. doi:10.1177/104973299129122252.
Snadden, D., & Thomas, M. (1998). The use of portfolio learning in medical education. *Medical Teacher, 20*, 192–199. doi:10.1080/01421599880904.
Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
Talbot, M. (2004). Monkey see, monkey do: A critique of the competency model in graduate medical education. *Medical Education, 38*, 587–592. doi:10.1046/j.1365-2923.2004.01794.x.
Taylor, C., & White, S. (2000). *Practicing reflexivity in health and welfare*. Buckingham: Philadelphia.
Trede, F., Higgs, J., Jones, M., & Edwards, I. (2003). Emancipatory practice: A model for physiotherapy practice. *Focus on Health Professional Education: A Multidisciplinary Journal, 5*, 1–13.
Wessel, J., & Larin, H. (2006). Change in reflections of physiotherapy students over time in clinical placements. *Learning in Health and Social Care, 5*, 119–132.
Williams, D. (2002). Reflective practice: Writing and professional development. *Journal of Medical Ethics, 28*, 56–57. doi:10.1136/jme.28.1.56.