

## **Tertiary Teachers Learning About Teaching: Integrating Theoretical and Practical Knowledge**

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### **Abstract**

This paper reports an investigation into the knowledge development of a group of tertiary teachers who participated in a postgraduate course on teaching and learning. Through interviews of participants, observations of participants' teaching, and an examination of the course and its implementation, it was shown that the course served primarily to affirm participants' current knowledge about teaching, and to extend their ability to articulate 'why they do what they do'. However, evidence showed that the course did not necessarily enhance participants' ability to translate theoretical knowledge into practical knowledge.

The study highlighted the necessity to acknowledge the practicality of teaching as core to the nature of learning about teaching and led to implications about the content and processes of such courses and their application within professional development experiences for tertiary teachers.

**Keywords:** tertiary teacher development; practical knowledge; theoretical knowledge; postgraduate certificate in tertiary teaching.

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## Background

One of the ways that many universities and other tertiary institutions support the enhancement of academics' teaching knowledge and practice is through the provision of formal courses in higher education teaching and learning. These courses are usually designed to expose participants to theories underpinning higher education teaching and learning, to encourage them to reflect on their own teaching knowledge and practice, and, presumably, to enable them to make changes in their practice to better enable their students to learn.

In addition to these intentions, an overarching goal is often to promote and enhance the scholarship of teaching. The scholarship of teaching was first introduced by Boyer (1990) and then later by Shulman (2000), who argued that research and teaching should not be seen as separate entities in an academic's working life, but that teaching should be viewed as a legitimate source of scholarly activity. For teaching to become a scholarly activity, academics should implement carefully planned investigations into teaching and learning. Such investigations should be documented and results should be exchanged, held up for public scrutiny and peer review. Helping teachers to investigate their own teaching has been a major thrust of many formal postgraduate courses in teaching and learning for academics.

Also, and within the scholarly investigation framework, it has been argued that any formal course in teaching and learning should be able to be examined in terms of its ability to promote and enhance *knowing* (a body of declarative knowledge, about teaching, about learning), *acting* (putting the body of knowledge into practice) and *being* (integrating the knowing and the acting within the self so that one can contribute meaningfully to the world) (Barnett & Coate, 2008). In other words, does the curriculum support the development of learning involving not only content or subject matter knowledge, but also the application of that knowledge in a variety of contexts and situations? Is the learner transformed in some way; the learning becoming an integral part of the self, resulting in self-awareness about how the learning determines and influences one's thoughts and actions, and impacts upon the social contexts within which one lives and works? Self-aware learners, it is argued, are better placed to reflect critically upon their place in the world, how they are being positioned and how they position others by their actions (Barnett & Coate, 2008). Courses in teaching and

learning should be examined in terms of their capacity to support the development of critical, self-aware teachers. However, it is not necessarily clear in specific terms what constitutes *knowing*, *acting* and *being* as knowledge types.

The work of Meyer and Land (2005) concerning the notion of key ideas, troublesome knowledge or "threshold concepts" that are pivotal in helping teachers come to grips with the essential ideas underpinning teaching and learning in higher education settings, can shed some light on the nature of *knowing*, *acting* and *being*. Threshold concepts are concepts that are essential elements of any discipline. They form the integral structure or heart of a discipline. They are core and essential to the very meaning of a discipline and are transformative, irreversible, integrative, bounding and problematic (Meyer & Land, 2003). Learning or comprehending a threshold concept has been described as resulting in "a transformed internal view of subject matter, subject landscape, or even world view" (Meyer & Land, 2003, p. 1). Threshold concepts hold the key to unlocking the world of a discipline, or opening the door to how the discipline views the world; the paradigm underpinning it (Meyer & Land, 2005). Without a deep understanding of these key concepts, the discipline is in some ways closed to individuals. Gaining knowledge of threshold concepts means developing or changing deeply held understandings and viewpoints. This type of learning is about personal understandings, and can be equated to the sort of knowledge on the level of *being* as described earlier (Barnett & Coate, 2005). Threshold concepts of teaching and learning in higher education may include the act of reflection (e.g., as described by Schön, 1987) and notions surrounding the ideas about how conceptions held by both students and teachers can influence and determine behaviours and learning and teaching effectiveness (Trigwell & Prosser, 1997; 2003). However, for the most part, threshold concepts have been investigated as they pertain to disciplines. The process of reflection upon discipline threshold concepts can be seen as a professional development activity for educators, matching well with the intentions of formal courses in tertiary teaching (McLean, 2009).

If reflection of teaching and learning is a threshold concept of higher education then it is perhaps a positive thing if it is an explicit part of a formal course in tertiary teaching. At the core of the development of *being* is the act of reflection, which involves the type of thinking that "enables us to know what we are about when we act. It converts action that

is merely appetitive, blind, and impulsive into intelligent action” (Dewey, 1964, cited in van Manen, 1995). Schön (1987) describes reflection as a dialectic process in which the person brings to light their values, beliefs, assumptions and perspectives and then analyses them in a critical way against their practices. The process is one in which the person works towards attaining a match between the held/claimed values, beliefs and perspectives (espoused theories of practice) and actual practice (actual theories-in-use).

Based upon these general notions, Butler (1996) describes teacher reflection as the process through which theoretical and practical knowledge about learning and teaching available in the public domain, is brought together with an individual's world view and their developing personal practical knowledge. Reflection as a process can be demonstrated by being able to report about an event, review and refocus understandings about aspects of that event, analyse the occurrences more deeply, and then reconceptualise ways of understanding the event (Campbell-Evans & Maloney, 1998).

Teachers reflect on action when they are "thinking back on what [they] have done in order to discover how [their] knowing-in-action may have contributed to an unexpected outcome” (Schön, 1983, p. 26). They can also demonstrate reflection-in-action which means that upon assessment of a situation they respond immediately to needs (Schön, 1983). Butler (1996) expands Schön's modes of reflection on and in action by incorporating an element of time and a view that in order to enable novice to expert development, explicit purposeful reflection is necessary and that learning is part of that development. Thus Butler describes three modes of reflection: (a) *reflection to action* meaning that reflection can lead to rethinking actions and generate new responses or learnings in the light of those thoughts and reflections; (b) *reflection in action* which is very similar to Schön's (1983) version, but described by Butler as being difficult for the novice to demonstrate, as learning and expertise take time to develop; and (c) *reflection on action* which occurs over a long period of time, resulting in the accumulation of ideas and recognition of patterns of behaviour, and accompanied by changed views and new learning.

New learning and insights about the self and the context in which one operates are the outcomes of ongoing reflection. The self-awareness that emerges as a result of

engaging in reflection is a critical aspect of the development of a sense of *being* (Barnett & Coate, 2008).

Where the professional development environment is concerned, there is much research documented which may provide insights into answering questions about how to structure and implement appropriate and effective learning experiences for tertiary teachers to promote and support reflection on practice (see for example, Carew, Lefoe, Bell & Armour, 2008; Baume, 2002; Viscovic, 2006; Wilson, 2007). Research based in other educational sectors can also provide insights. A study of experienced primary school teachers who were developing their understandings of the teaching and learning of a new curriculum area, technology education (Stein, Ginns & McDonald, 2007), led to the development of a model for teacher professional development. While the study was undertaken with primary school teachers, it focussed on the development of teacher professional knowledge. Certainly, the influences on the teachers in the study referred to were a result of their particular context, but because the focus was upon broader ideas about teacher professional development, the study has applicability for any teacher working in any educational context. The model for teacher professional development that emerged from the study acknowledged the central role played by a teacher's personal constructs, or the way a teacher makes sense of his or her knowledge about teaching and learning within an institution and within a discipline or field. The model highlights the roles that theoretical (similar to *knowing*), practical (similar to *acting*) and reflective (similar to *being*) knowledges play in the development of teachers and teaching through the processes of professional development. It is through the reflection on current knowledge, exposure to new knowledge and opportunity to think about and reflect on the practice of that knowledge in real teaching situations that change and development of teachers and teaching can happen (Stein et al, 2007). Professional development that has been shown to bring about positive change in teachers' practices is the sort of development that takes place at the personal construct or *being* level and involves the act of reflection (Butler, 1996; Cochran-Smith & Lyle, 1999).

## The current study

Questions concerning the extent to which a Postgraduate Certificate in Tertiary Teaching (PGCertTertT), taught by the first author, adequately provided for teacher development of *knowing* (or the theoretical knowledge), *acting* (or the practical knowledge) and *being* (or the reflective knowledge) aspects of teaching and learning in higher education settings were the impetus for this study.

It was with broad ideas around knowledge types, threshold concepts and ways of providing meaningful professional development for teachers in tertiary institutions that the goal of this study - to investigate the knowledge development of a group of participants who engaged in a one year postgraduate course on tertiary teaching and learning - was devised. More specifically, the project aimed to:

1. Ascertain the prior views and knowledge about teaching and learning held by participants enrolled in the course;
2. Monitor the development of their professional teaching during their participation during one semester of the course;
3. Draw conclusions about the effectiveness of the course for facilitating the successful development of professional teacher knowledges and attributes of participants;
4. Identify facilitating and hindering factors, related to the *knowing*, *acting* and *being* aspects of the PGCertTertT curriculum, to successful development of professional teaching knowledges and attributes by the participants enrolled in the course.

## Design and Methods

An interpretive research methodology (Erickson, 1998) was utilized, as this approach is able to provide “the meanings and purposes attached by human actors to their activities” (Guba & Lincoln, 1989, p. 106) which was the focus of this study. This approach was essentially a constructivist approach, meaning that understandings of what happened in the course were co-constructed by the participants within the activity. The role of the researchers was to bring an outsider perspective to critique the understandings as they were expressed by the participants. The researchers brought views that were informed by

knowledge of currently accepted perspectives about curriculum, teaching and learning from the broader higher education research community. Thus, the researchers acted as filters (interested in achieving particular project aims and having their own interests and foci), but in alignment with the research methodology, took on the role of developing an understanding of events and viewpoints that were co-constructed by both the participants *and* the researchers.

Because it is interpretation that is of prime concern when undertaking a project using an interpretivist methodology, it was important that certain explicit features were built into the study to ensure that co-construction occurred. The researchers wanted to make sure that they were confident that reports they made on how the participants understood events and the meanings behind what they said, were represented as accurately as possible. These explicit features included a number of quality assurance checks which were an integral part of the overall approach to gathering data and interacting with the participants.

To ensure quality, the study employed the criteria of Guba and Lincoln (1989) for interpretive inquiry namely, trustworthiness and authenticity. Trustworthiness is enhanced when the match among the type of study, the nature of the ideas under investigation and the data gathering tools and processes is made explicit. Trustworthiness also includes credibility which is “establishing the match between the constructed realities of respondents and those realities as presented by the evaluator [researcher] and attributed to various stakeholders” (Guba & Lincoln, 1989, p. 237).

In this study, trustworthiness was enhanced by prolonged engagement over two semesters (meaning that there was time built into the study so that participants and researchers were able to develop shared understandings and that views or actions that were reported were not "one off"); persistent observation (meaning that researchers focused attention on the core research questions including knowledge development across the course of the study); peer debriefing (meaning researchers discussed and debriefed their developing understandings about the study on a regular basis amongst themselves); and member checks (meaning that participants and researchers debriefed together on a regular basis to co-construct understandings of events and perspectives). Authenticity refers to the way the approach and processes of the study provide ample and fair opportunity for participants to express and demonstrate their views, and for

researchers to make reasoned and well-founded judgements that are verifiable by participants (Guba & Lincoln, 1989). In this study, authenticity was enhanced by fair presentation and analysis of assertions. This included researchers actively seeking negative examples and a range of interpretations from the participants. In this way, participants were given plenty of opportunity to express their views and perspectives, even when presented with alternative ways of interpreting those expressed views and perspectives.

The overall interactive approach can be described as a hermeneutic cycle (Guba & Lincoln, 1989). Along the way, researchers developed assertions about the participants' understandings and through regular interactions with the participants, the researchers were able to test the assertions, affirm them or review them. This cycle continued as the study progressed. Emerging assertions were discussed with participants and research colleagues and tested and refined in the light of further evidence. Triangulation, involving the use of multiple data sources increased the chance that assertions as they emerged were consistent with a variety of data. With extended observations including classroom observations and through the collection of a variety of data from a variety of sources, the tendency for participants to exhibit contrived behaviours or for false assumptions to be made about the perceptions and practices of the participants were minimised.

In summary, researchers went to great lengths to build features into the study to ensure confidence that the findings emerged from a rigorous investigation. Furthermore, the outcomes of the study are couched as "assertions" about the particular context and situation described, thus reflecting the interpretivist nature of the study.

### ***Participants***

Participants in the study were a cohort of tertiary teachers, 16 in total, enrolled in a two semester accredited postgraduate certificate in tertiary teaching. The group was made up of nine participants from a university, six from a polytechnic and one who taught at both a polytechnic and a community education organisation. Three of the participants were purposefully selected as focus participants – Sykes, Susan and Brian (pseudonyms). They represented a spread in discipline areas and range of views and teaching experience. All three taught in a university.

## **Data Sources**

A variety of data sources were drawn upon to enhance the credibility and trustworthiness (Guba & Lincoln, 1989) of the researchers' assertions about the participants' developing thoughts and actions. These included the following:

- a) *participant interviews (3)* – All interviews were audio taped and transcribed. To enhance trustworthiness the transcripts were returned to the interviewees for comment (Guba & Lincoln, 1989). In other words, the participants were given an opportunity to check for the accuracy of the transcribed interviews so that researchers could be assured that what had been recorded and transcribed was in line with the interview event as recalled by the participants.

*Interview 1* (all enrolees in the course) occurred at the start of the first semester and sought to ascertain participants' general views about teaching and learning, the nature of their teaching experience and personal goals and intentions for enrolling in the course. This interview served to provide the researchers with an overall sense of the spread of views and perspectives held across the cohort. It also served to introduce the group to the research that was being undertaken and that they were a part of, even if not as focus participants.

*Interview 2* – this was conducted around the middle of the year with the focus participants only. The three focus participants were purposefully selected (Patton, 1990) using the data from Interview 1, so that the group represented a range of views, experience, discipline, backgrounds and interests. Interview 2 sought to identify the subject matter knowledge development of the participants and to gain the participants' views on which, if any, of the structures within the course, such as online interaction, workshops, reading materials, had been significant in helping them to gain that knowledge.

*Interview 3* - also with focus participants and was held at the end of the year. The interview sought similar information as that of interview 2. In addition, though, snippets from the video recordings made of the workshop sessions were used as stimulated recall to help interviewees recall events and the meaning they made

of what happened at the time (Lyle, 2003). Then, a set of assertions about the course and about the participants' knowledge development was presented for comment. These assertions reflected a summary of the course participants' views and understandings about their course experiences, as proposed by the researchers in the light of their analysis of the data gathered across the year. Thus, the hermeneutic dialectic process was continued through to the end of the data collection period (Guba & Lincoln, 1989). The re-presentation of the assertions during interview 3 was an opportunity to gain final assurance that the construction of events and understandings of them from the participants' perspectives had been captured accurately by the researchers.

- b) *video recordings* were made of each of the first semester, fortnightly, face to face workshops.
- c) *artefacts* included course materials, written (discussion board) interactions recorded online, and completed assessment tasks.
- d) *field notes*, made by the researchers, of observations of (i) course workshop sessions (also video taped); and (ii) participants' teaching episodes. Two observations were undertaken by the researchers of each of the three focus participants as they taught their own classes. The field notes contributed to an overall analysis of the degree of match between the participants' espoused theories (gathered through the interviews) and their enacted theories.

Across the year, therefore, data accumulated. Through regular meetings of the researchers with research colleagues, assertions about the *knowing*, *acting* and *being* knowledges of the participants were proposed, checked and confirmed or revised in the light of conflicting evidence. This process produced a set of four assertions, each of which was refined during the final interview. The refinement was done by presenting the proposed assertion and asking the interviewee about the accuracy of its representation of the course participants' thinking, as well as how the assertion applied specifically to the interviewee. The assertions were then refined (reworded) in the light of the comments from the interviewees. The resultant four assertions appear below.

Case studies on each of the focus participants were then assembled, and they were checked with each participant for accuracy. These "case studies" were compilations of data, summaries of events, descriptions of teaching and teacher thinking and practices for each of the focus participants. The checking was undertaken to ensure that, for the participants, the case study compilation captured and reflected what they felt was a true account of their thinking, perspectives and learning development during the course of the study.

## **Findings**

The results of the study are now presented around the set of four assertions referred to above about the knowledge development of the participants in the course. For the purposes of this paper, the discussion will draw primarily from the interview data from the case studies of the three focus participants (Sykes, Brian and Susan), and will be supported by reference to other data sources. The three case studies provide evidence of the spread of participant perspectives upon the issues of interest and relevance to the intentions of the study. The discussion will highlight the knowledge development of the participants, as well as factors that may have hindered or facilitated their knowledge development. Following the discussion, implications are made for the professional development of tertiary teachers.

***Assertion 1. There has been some expansion of knowledge about institutions; the subject matter of teaching and learning in tertiary settings; how teaching and learning happens in various disciplines; and the design, development, implementation, and evaluation of papers and courses.***

The knowledge underpinning this assertion is theoretical knowledge, that is, subject matter (declarative) knowledge, or *knowing*. Many topics in the course addressed current movements and issues in tertiary education for example, variations in learning contexts, the nature of student cohorts, critical reflection, theories of teaching, student learning, disciplinary knowledge, developing a critical rationale (artefacts - course materials). It seemed that there was a raised awareness that the "everyday" routines, experiences, events that make up the teaching aspect of the tertiary teacher role, could

be objects for serious study, reflection and investigation. For example, Sykes expressed a conscious recognition that there was a knowledge that he had gained about teaching and learning as a phenomenon:

*I learned quite a bit about the subject matter of teaching and learning and really finding out that teaching and learning are an integral thing, two way thing. (Sykes, Interview 3)*

The cohort taking the course included lecturers with a variety of teaching experience from a number of different discipline areas and from three different types of tertiary institution. This meant that discussion was generated about a variety of common and uncommon issues, and experiences were shared (discussion board, video recordings). Participants readily acknowledged that they had learned something of the nature of tertiary institutions and how teaching and learning is carried on in a variety of disciplines in a variety of places. For example, Brian expressed his new awareness about how the research he explored during the course had expanded his view about social science research, a field in which he was embedded and which was part of his everyday life as an academic staff member (teacher and researcher):

*I think as a result of doing the course, I think I've been made much more aware of research in these kinds of areas, and much more aware of varieties of ways of doing the research as well as varieties of theories underpinning different educational sort of philosophies which I probably wasn't aware of. You know, so it's, for me, some of it is new language; some of it is new concepts. Some of it are concepts which I can relate to, more traditional sort of social science kinds of research (Brian, interview 3)*

***Assertion 2. Participants have developed ideas about good teaching and learning during this course, but have not necessarily tried them in practice as the course does not facilitate the translation of ideas into practice.***

This assertion is about practical knowledge, or *acting*; the translation of theoretical knowledge into practical teaching and learning situations. Sykes acknowledged that the course did not necessarily help a teacher translate the theories/concepts into the practical situation.

*What bit the course doesn't necessarily show is what that looks like in practice. It's not showing, it doesn't explain how those theories would translate into, say student-centred learning, how that would necessarily look in the classroom (Sykes, Interview 3)*

Observations of Sykes' teaching showed that he seemed to be carrying on in the style of teaching that he had established for himself. Discussions with him following those observations confirmed that he had not introduced anything into his teaching that was not already part of his normal approach (field notes). Similarly, Susan did not believe the course necessarily supported the translation of ideas into practice.

*I can't recall any specific thing in [the course] that translates directly into a practical application but that doesn't necessarily mean to say that I won't. (Susan, Interview 2)*

Indeed, field notes of the discussions held with Susan after the observation of teaching occurred revealed that she was drawing upon ideas she had seen other teachers in her department use in lectures and those she had experienced herself as a student, rather than make any reference to specific ideas raised in the PGCertTertT course (field notes). Even so, Susan acknowledged that

*It's certainly made me want to try new things, like to try different strategies to see if this would work, and I would. It certainly gave me a language that explained what we do and why as well, which is really neat when you're talking about some of the more practical based stuff that we do. (Susan, interview 2)*

Interestingly, Susan was not convinced that having a course that told you exactly how to do something would be the way to go anyway, as it is ideas that teachers pick up and it is they who have to work with or apply them.

*I think if you [I] want to get to the point and implement this, I just find a way to do it. I think hitting the idea of what you want to do is more important than the how to do it. I think it's one of those things that you kind of think about when you're doing things. (Susan, interview 3)*

For Brian, who had developed a view of the importance of reflection, this assertion was "reasonable" as "it wasn't suggested that, as you're learning, you should go out and practice, if you know what I mean" (interview 3). However, he went on to say that

*Having said that, I have tried to build in, as a result of the course, during my own teaching, a little bit of reflection. That stage four [business studies] course for example, including as I mentioned before, getting the client to reflect as well as the students to reflect. (Brian, interview 3)*

***Assertion 3. Participation in the course did not lead to a shift in personal teaching philosophy, rather it served to help participants to clarify and/or deepen their understanding about how they viewed teaching and learning.***

The type of knowledge at the heart of this assertion is reflective knowledge. It is a higher order knowledge, which is more about a teacher's *being*, voiced through what may be called a personal philosophy about teaching.

When asked, most of the participants claimed that they had not made any drastic changes to the way they thought about teaching and learning due to their involvement in the course (case studies). Rather, what they were able to do was to talk in more detail about their views and express what was going on for them in their teaching more easily. During the interviews, they usually made references to their practices and how those practices related to personal change and development. For example, Sykes, a lecturer in physiotherapy, stated in interview 3 that

*it has been very important in just confirmatory things ... the confirmation that what you've been thinking all along is, you know, it's the right thing to do...I haven't been off track just yet so now it's time to build from that, time to expand upon that, not to become complacent with it. So, yeah, it's been good from a confirmatory point of view.*

This was confirmed through statements made by Sykes during the class workshops, where he articulated his thoughts about teaching and learning (video recordings) as well as through the final written assignment he submitted (artefacts).

Another example of this comes from Susan, a geography lecturer. One of Susan's personal goals for the course was to learn more about how to go about large class teaching, as her experience had been mostly in running field courses, teaching in labs and small group tutorials. Drawing on her experience as a small group teacher, she described her views about teaching and learning in this way in interview 1:

*I'm not about giving people answers so I tend to ask them, well, what do you think about that and why could that be? And if they still don't get it, I'll use the examples and [ask questions]... So it's less about me, and more about what they've learned already and kind of bringing that knowledge out into an applied type of problem.*

She reiterated thoughts in the discussion held after her first teaching observation session (field notes). Susan was thus experiencing a struggle as she tried to work her deeply held thoughts about teaching in small groups into the new situation of teaching large groups:

*I've only ever given a couple of lectures...It's not particularly enjoyable, I must admit...I am struggling a bit with figuring out how to get some of that information across and engage the students, I guess. In some topics, I can see it very clearly. Like topics I'm very passionate about and I can see how you can build a much more integrated approach....I'm still struggling a bit with some of the lectures which I tend towards transmission at some point and I guess the way of teaching it is to set up the problems, why is this important and then try to say, well, okay, this is what we need to know about this system and this is what we know and try to build up that way and then inform that with examples. (Susan, interview 1)*

In interview 3, however, when asked about what she had learned about large group lectures, she was able to articulate more easily, what it was that she found different between working with the two differently sized groups. She said that she experienced a difference in the personal relationship aspect of working with the small group as opposed to the large impersonal lecture group.

*I've been doing the small group teaching for 10 years [and] you can feel what's going on a bit better...Whereas in a really big class, and I'm increasingly more comfortable with that...you don't quite get the same sense of what's going on. You still get a sense and you can still feel whether you've really got them or not but there's always pockets, you know, that you never connect to. Whereas if you've got 10 people, you can work on getting all of them...It's when you've got 200, you know you're only talking to about 50 to 100 of them and the rest are just there to keep the seats warm...I certainly myself felt it was unknown territory...but, you know, it's just a case of experience of when things go wrong, how do you deal with that. You incorporate other things seamlessly...and so it is a case of getting used to it, I think.*

So in essence, Susan had made no drastic changes to her deeply held philosophies (around the engagement of students, the support provided by teachers and the facilitator role that teachers need to play in order to support deep learning). Her

struggles were more on a practical, implementation level, as she tried to overlay her views about teaching small groups on her new large group teaching context. At the end of the course, she was more able to rationalise how those deeply held philosophies could still be real for her in the new environment of large group teaching. Her awareness of what it was that caused the lecture situation to be limiting or different from the small group situation became more prominent and she was beginning to develop a better sense of how to use her well formed teaching skills within that new environment.

***Assertion 4. As a result of the course, participants are better able to reflect, that is, to evaluate, review, self criticise and learn from their teaching experiences.***

Similar to Assertion 3, Assertion 4 is also about reflective (*being*) knowledge. Perhaps because of the development of knowledge around tertiary teaching and being exposed to others' viewpoints and experiences both from other participants and from reading the literature, participants did recognise that they were more able to reflect on their teaching and their students' learning (artefacts – final assignments). Not that they had not done so previously, but they were now better able to see the value of reflecting. Brian, for one, recognised that what he had suspected about reflection all along was indeed considered worthwhile from an educational and teacher development point of view

*The major shift has been, as I said before, in this, has been putting more weight on the importance of reflection. I've always looked for feedback [on my teaching], but I've not always taken the time to really reflect on that feedback in, you know, a sort of a deeper kind of a way.*  
(Brian, interview 3)

Susan provided a good example of how her reflections had led her to recognise a tension in what she was asking students to do and their perceptions of the task.

*It's kind of interesting because I've to mark critiques of a project. And so my understanding of what that should do and what they're trying to do is actually, it's kind of an interesting tension. Like I've got a certain idea from this [the PGCertTertT course] now, what I think they should do, and that's not necessarily the way they see it and so you know, trying to figure out how to blend those things.*

Building on this, Susan was able to talk about how her students engage in self reflection.

*We teach students to be better self-reviewers and self-reflectors. [I've] told pretty much all my friends who have been doing teaching, about students who sit there quietly and say, look they could just be self-reflectors, and some of them have gone, yes, that's me. You know, I'm thinking about stuff but I don't say things and so I guess [the course] has been a really nice expansion of understanding sort of how students sometimes, you know, we may perceive them as doing one thing but they're not actually. They're still involved. (Susan, interview 3)*

There was a sense that for Susan, her experience as a student in the course had assisted her to think about the learning situation from the students' perspective, in a way she had perhaps not done before. She had expressed in an earlier interview and in her final assignment work (artefacts – final assignments; video recordings of workshops; online discussion) that it was important as a teacher to try to understand her students, to learn about them and form a relationship of trust with them. Thus her description of students as self reflectors, above, seems to follow on very well.

Susan acknowledged that the reflection she engaged in led her to develop deeper insights into her teaching. It was the course that provided her with the frameworks (“the skeletons”) and ideas that structured and sparked her thoughts and reflections – “The deeper insight came from the stuff for myself and the skeletons came from the classroom situation” (Susan, interview 3).

## **Discussion and Recommendations**

This study aimed to investigate the knowledge development of a group of participants who engaged in a postgraduate course on tertiary teaching and learning. Through ascertaining the prior views and knowledge about teaching and learning held by participants then monitoring their knowledge development during the course, the researchers were able to draw some conclusions about the effectiveness of the course for facilitating the successful development of professional teacher (*knowing, acting and being*) knowledges and attributes.

This study confirmed findings about the effectiveness of similar courses carried out elsewhere but, unlike many previous studies, made use of data beyond participant self-reported satisfaction (Knight, 2006a). An important outcome of this post graduate course for tertiary teachers was its ability to support the development of teachers' capacity for reflection on practice and their ability to articulate their philosophy for teaching and learning, basing their ideas and views on and within current research (Butler, 1996; Schön, 1987). Consequently, it seems reasonable to argue, that a course of the type described in this study does appear to be a good basis for supporting learning and change that is transformative - that helps learners to use their subject matter knowledge (*knowing*) in ways that are useful for their students and for their own development as teachers (*acting*) and to reflect critically about their learning and the impact they have upon the various contexts in which they live and work (*being*) (Barnett & Coate, 2008). Indeed, it may be that coming to grips with the role that *knowing*, *acting* and *being* play as part of one's professional self is a threshold concept (Meyer & Land, 2005) which is key to understanding (the discipline of) teaching and learning in tertiary settings.

On the other hand, our study also highlighted the limitations of such courses to facilitate participants' ability to translate theoretical ideas about teaching and learning into practice. As Knight (2006b) has argued, learning on the job is a very effective way of learning about teaching, so not including real opportunities to learn on the job in a post graduate course in tertiary teaching – real, in that such opportunities are followed up, perhaps through the assessment regime - may be a cause for concern. The course investigated in the current study left the teachers to experiment with practical ideas for themselves. Is it appropriate for teachers to be left to their own devices, even though they are experienced teachers? It has been suggested that even experienced teachers need some support (of varying kinds, depending on the change or development and needs of the individual) to facilitate their learning (Villegas-Reimers, 2003). How can that supportive aspect be built into such courses?

The outcomes of this study led us to make some recommendations for future practice. Curriculum developers and academic staff developers should articulate more clearly the aims of courses in teaching and learning for tertiary teachers, and then either create new ways of meeting those aims or to re-examine and realign those purposes with outcomes that are achievable within current structures/programmes. This study has

shown that changes in practice are not necessarily the outcome of participation in such a course. Consequently, claims about changed practices that often appear in learning outcome statements in tertiary teaching courses should be rethought.

Engaging teachers in reflective processes to help them articulate their philosophies of teaching and learning may be one solid step in assisting them to become more self-aware of their own beliefs and practices and lay the foundation for thinking on a critical level (*being*) about education. However, this study suggests that that is not the end of the story. There is also a need to create opportunities for teachers to examine their actual practices in more detail, not only their beliefs about their practices; to explore how their practices match their theoretical/philosophical ideals. Following the ideas of reflection as described by Schön (1987) this will engage them in the process of aligning espoused and enacted ideals and aspirations for their teaching and for their students' learning.

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