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### **Refereed Papers Collection**

Papers listed below as Refereed Papers indicate that the full paper has been double-blind refereed and recommended for publication in the 2014 conference papers collection.

Tania Aspland

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# **Making online classrooms real: Engaging pedagogy for online students**

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## **Abstract**

In recent years there has been a move towards offering University courses in an online mode to increase access for marginalised groups of students and to cater for students that wish to complete their studies whilst still continuing to be employed during normal business hours. Students in Pre-service teaching programs, like other students, have taken to this form of study in large numbers. This move towards online pre-service courses of study is not without its critics with an often heard comment from practicing teachers being *“how can you prepare students to be teachers when you don’t even get to meet them face to face”*. This paper reports on the findings of a group of teacher education academics who implemented synchronous cooperative learning strategies in their online courses with the aim of giving students a face to face classroom experience whilst working in an online medium (Blackboard Collaborate™). Quantitative and qualitative data were collected using an online survey and online synchronous focus groups. The findings of this study demonstrate the need for students to have access to synchronous interactions with peers and lecturers as well as the need for further investigation into developing engaging pedagogy for online learners. The results provide a stimulus for further discussions and deliberations by higher education practitioners moving towards offering online pre-service education programs.

**Keywords:** teacher education; online pedagogy; cooperative learning; blackboard collaborate

## **Introduction**

Over the last 6 years, the researchers have been teaching in both on campus and online modes. During this time they developed an increasing unease as to the lack of parity between the

experiences of students in these two very different contexts. As their role was to prepare preservice teachers, the need to instruct preservice teachers in how to engage their future students, both academically and socially, as well as modelling the manner in which this could be done, was very much in the forefront of their minds. Early in 2013 the researchers made the decision to investigate how they could mirror what they were doing in their face to face classes with their online students. Specifically, activities reflecting a Social Constructivist (Vygotsky, 1934) view of learning were a focus of their attention. As the researchers were already using the Blackboard Collaborate<sup>TM</sup> synchronous communication tool, they set about identifying how its capabilities could be utilised more broadly and thus increase their repertoire of cooperative learning strategies. As research into the use of synchronous online cooperative learning strategies is in its infancy the decision was made to not just implement these new strategies but to identify if they had a positive effect upon the online learning experience of the preservice teachers.

In this paper the researchers detail a possible way to enhance an educator's repertoire of teaching strategies available for use in online classrooms. The strategies are described in detail as is the feedback from university students suggesting the effect these strategies have had on their online learning experience. The researchers provide reflections on their experiences using this strategy which will assist other teachers to decide whether its inclusion is warranted in their own online classroom settings. What is presented here is part of a larger study into the learning preferences of online teacher preservice students.

### **A Brief Review of the Literature**

Since the start of the 21<sup>st</sup> Century the number of University students studying in an online mode has continued to increase as has the diversity of the students undertaking this form of study

(Hrastinski & Jaldemark, 2012; Lynch, 2010). At this same time higher education institutions were still coming to grips with the notion that e-learning is a very complex phenomena and that just providing technology infrastructure is insufficient for individuals and institutions to meet this new challenge (Salmon, 2005). The difficulties faced by academics teaching online is prominent amongst the literature. Beetham and Sharpe (2007, p. 49) highlight the difficulties confronting academic staff where they describe e-learning as the “trojan mouse, which teachers let into their practice without realizing that it will require them to rethink not just how they use particular hardware or software, but all of what they do”. Njenga and Fourie (2010) caution academics to question their practices and to reflect on “whether in e-learning the focus is on the ‘e’ or on the learning” (p. 200). Authors such as Kop, Fournier, and Mak (2011, p. 78) raise the issue that online educators need to take on a variety of roles including “curator, learner, facilitator, supporter of ‘re-purposing’, and ‘remixing’ of information, coach, moderator, provider of technical support, lecturer and sharer of resources”. Another problem faced by online academics is highlighted by Paechter and Maier (2010) who noted there is still very limited understanding of student online experiences, and which online activities are preferred by students and why (Paechter & Maier, 2010). It is clear that online learning and online pedagogy are fields requiring further in-depth study.

A common pedagogical approach held by educators working in high post compulsory education throughout the UK and Australia is that of Constructivism (Beetham & Sharpe, 2007). This view of learning as a social process “with language and dialogue being essential for cognitive development ... makes social interaction an important element for student learning in collaborative online groups” (Hutchinson, 2007, p. 361). Online academics have used a range of synchronous and asynchronous strategies to guide this social interaction with Havard, Du, and



Xu (2008) noting that the success of student collaboration being directly related to the tools chosen to facilitate this collaboration.

Frequently the main strategy used by online academics to engage students with their lecturer and their peers has been through the use of asynchronous Discussion Forums (Gradel & Edson, 2011). Although studies have found these mainly asynchronous forums to be effective in enhancing the learning of online students (Akyol & Garrison, 2011; Gradel & Edson, 2011; Thomas, 2002), there have also been drawbacks noted such as off-topic posts, delayed feedback, low participation and negative feelings towards peers (Kupczynski, Mundy, & Maxwell, 2012). Other concerns with student use of Discussion Forums were raised by Hrastinski and Jaldemark (2012) who identified that student posts could be accessed by all participants (as well as the teacher) and could “create a fear of public ridicule” (p. 265). It is clear from current literature that the use of asynchronous Discussion Forums is insufficient to meet the needs of all students (Shea & Bidjerano, 2010).

In recent years there has been an increase in the use of synchronous forms of online communication (Kinshuk & Chen, 2006). McBrien, Cheng, and Jones (2009) state that although these tools are becoming more common, to date they still have not been studied extensively. One study which provided evidence of enhanced student learning experiences was that of Little, Passmore, and Schullo (2006) who found that online students favoured the use of emoticons, hand raising and shared whiteboard. The use of these online tools resulted in greater levels of interaction, positive attitudes of the students and stronger group identity when using the Blackboard Eluminate Live<sup>TM</sup> synchronous web tool (precursor to Blackboard Collaborate<sup>TM</sup>). Waite, Mackness, Roberts, and Lovegrove (2013) recently published their research into the effectiveness of Massive Online Open Courses (MOOCs) with a key finding that participants in

these courses underwent “transformative shifts” during synchronous workshop sessions. Although the research into synchronous online activities is in its infancy there is sufficient evidence that further study in this area is warranted.

### **Details of the ‘Synchronous Cooperative Learning Strategy’**

Although synchronous online group work with students talking to each other in breakout rooms had been previously utilised by the researchers, a refinement of these practices to allow more student control was planned. Within the Blackboard Collaborate™ application students have the capacity to communicate synchronously using Chat (typing responses) as well using basic draw tools allowing the recording of ideas/images on a shared whitespace. Students can also register how they are feeling (emoticons😊), vote on propositions (voting tool) and register they have a question to ask (hands up tool). Beyond these tools the students can speak to each other in real time and share video of themselves using as web camera. Instructors can construct virtual breakout rooms for group discussions and assign the ability for students to move themselves from virtual classroom to virtual classroom.

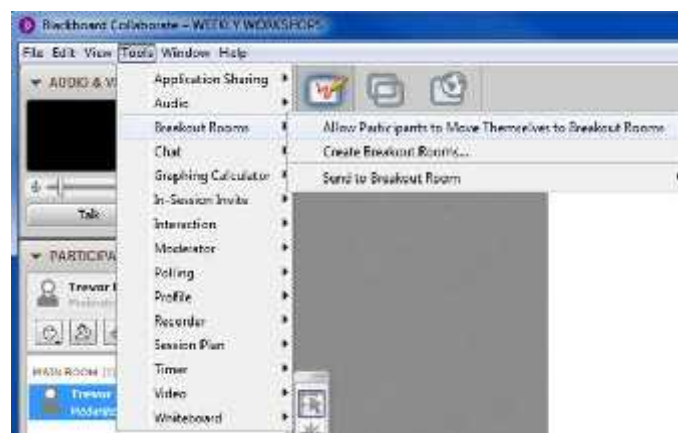


Figure 1. Directions for allowing student movement in Blackboard

By activating this free movement facility in Blackboard Collaborate™ a wide range of student-centred teaching strategies becomes available. Examples of a selection of these teaching strategies include:

1. Self-paced activities: different activities placed in different virtual classrooms with the students moving to a new room once they had completed the task.
2. Self-selected groupings of students: students moving themselves to themed virtual rooms for discussions or remediation.
3. Group decision making: groups of students deciding how they will share group tasks and moving to designated virtual rooms to acquire knowledge to be shared with their group at a later date (Expert Groups strategy).
4. Individual consultation/mentoring: whilst situated in breakout rooms individual students can move themselves back to the teacher's room to have questions answered or to seek advice (academic or personal).

Whilst employing a range of these strategies in their online classrooms the researchers also front-ended the learning sessions with specific instruction on the communication tools (tool bar, chat ...) and invested time in ice breaking activities with the goal of building group cohesion and trust. The distribution of handouts was conducted using the file share capability of Blackboard Collaborate™ mimicking the manner you might hand these out in a face-to-face classroom. All Blackboard Collaborate™ sessions were recorded so they could be accessed at a later date by participating students as well as those students not able to attend at the designated time.

## **Methodology**

The research questions that formed the basis for this study were:

1. Has the use of the new synchronous online teaching strategies enhanced the student online learning experience?
2. If the new strategies have enhanced the student online learning experience, specifically what aspects have been most valued?

To answer these questions the researchers used a Mixed Methods approach which included an online survey instrument (quantitative) and small focus group interviews (qualitative) (Creswell, Hanson, Clark Plano, & Morales, 2007). Approval for this approach was sought and approved by the University Ethics Committee and permission was granted by the relevant Heads of School for the inclusion of enrolled students. The population that were approached to participate in the research consisted of students enrolled in courses administered by the research team (Examiners) in semester one 2014, and encompassed first, second, third and fourth year students in the Bachelor of Education Program as well as students studying in the Graduate Diploma of Learning and Teaching Program. The online survey instrument required students to provide answers to a range of questions related to the effectiveness of online teaching strategies using a modified Likert scale. The scale was designed using 5 levels of agreement with the statement, as well as identifying if their course had not used these strategies or they had chosen not to participate (Matell & Jacoby, 1971). The data was entered into the SPSS (Version 22) statistical software package for analysis. The focus groups were conducted during online Blackboard Collaborate™ sessions and involved only those students who had experienced the new strategies. The group of students was a convenience sample (Bryman, 2004) as the discussions were completed at the conclusion of pre-existing Blackboard Collaborate™ workshops. The discussions were recorded, transcribed into NVivo 10 software package for the purpose of identifying themes.

## Results

What follows is a presentation of a small sample of the data collected during the researchers' current study into the usefulness of online learning experiences for preservice teachers. A more comprehensive description of the data and more detailed analysis will be provided in future publications.

### *Online Survey*

There were a total of 95 preservice teachers that completed the online survey instrument (N=95) of which 14 were male and 81 were female. The mean age of the respondents was 32.41 years with an age profile as displayed in Figure 2.

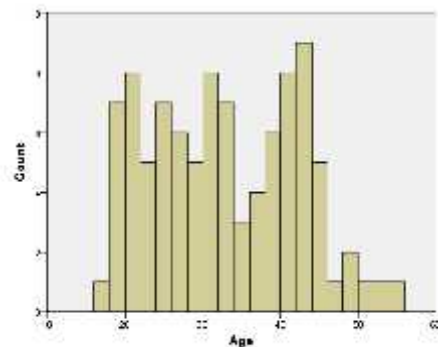


Figure 2. Age profile of online survey participants

To ascertain the effectiveness of the new online teaching strategy it was decided that a comparison with the most widely used strategy (the Discussion Forum) would be most appropriate (see Figures 3 and 4) for the intended audience. The question stem posed to the preservice teachers was *“I believe my learning is enhanced by”*:

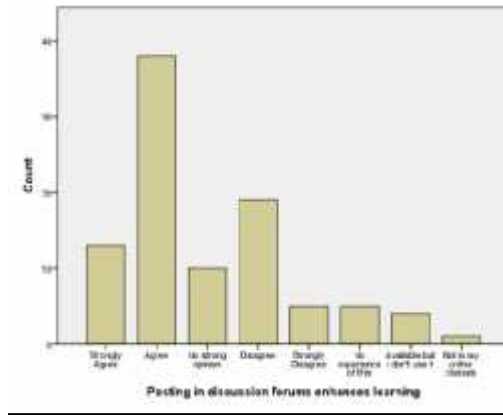


Figure 3

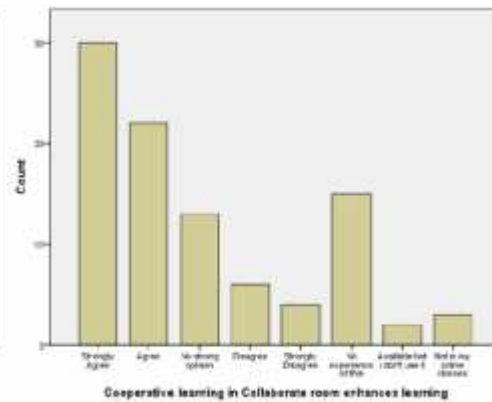


Figure 4

For this cohort 51 preservice teachers identified that posting in Discussion Forums enhanced their learning (agree or agree strongly). Interestingly, 52 preservice teachers identified that cooperative learning in the Blackboard Collaborate™ classroom enhanced their learning and there was a larger proportion of preservice teachers strongly agreeing with this statement.

As there has been much discussion in academic circles in relation to younger students being ‘digital natives’ (Prensky, 2001), the researchers decided to analyse this same data by age of respondent. With the assumption that the students having the most experience in the use of technology in an educational setting would be those having recently left high school. The decision was made to investigate recent school leavers ( $\leq 21$  years of age, Figures 5 and 7) and those deemed by higher education institutions to be mature age students ( $> 21$  years of age, Figures 6 and 8).

School Leaver ( $\leq 21$  years)

Mature Aged ( $> 21$  years)

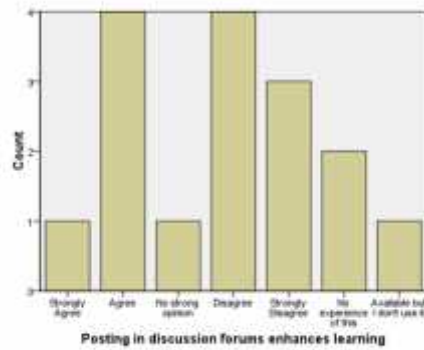


Figure 5

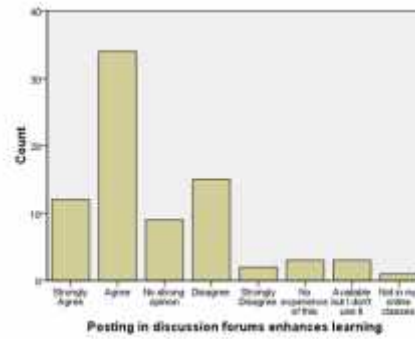


Figure 6

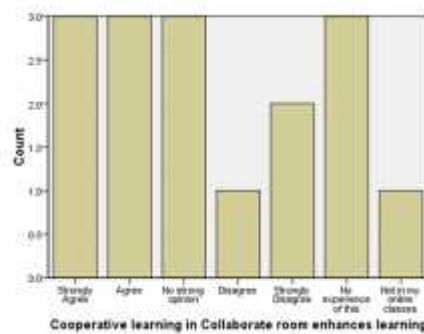


Figure 7

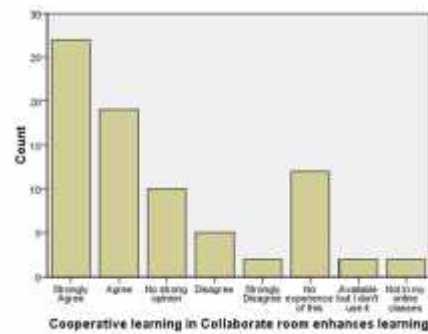
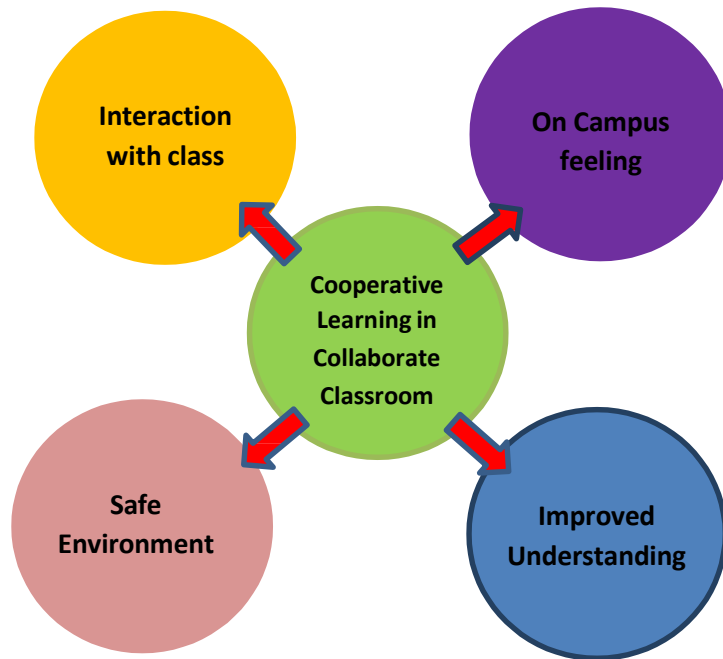


Figure 8

The data above illustrates that students, whether they be classified as “recent school leaver” or ‘Mature Aged,’ prefer cooperative learning in Blackboard Collaborate™ classrooms over the use of asynchronous Discussion Forums.

### *Online Focus Groups*

There were a total of 34 students that participated in the online focus groups, with 33 being female and one being male. A range of themes emerged from the data, the four most prominent themes are displayed in Diagram 1 below:



The effectiveness of using cooperative learning strategies in a Blackboard Collaborate™ classroom was strongly supported by students in their comments during the focus groups. 31 individuals commented that the interactive nature of the workshops being a key factor in why they attended the online sessions. The ability to actually share their thinking with others in real time is highlighted in the following student comment:

*“It’s a lot better than sitting and just listening to a lecture where you’ve got no input and you can’t put your voice in ... it’s basically like sitting in a class which is great”*

A range of students identified that being in Blackboard Collaborate™ sessions which uses cooperative learning strategies they could not hide or ‘lurk’, and were forced to engage with each other and the content:

*“It’s been very easy in other courses to say that your headphones aren’t working or having audio problems and just watched, but not had to put yourself out there ...it’s been much more interactive”*



The ability of the students to move themselves from room to room was also identified as adding to the experience:

*“Moving in and out of different chatrooms, I found that very interactive and it made the Blackboard session more interesting”*

Within the transcript of the focus group discussions there were thirteen specific references to how the cooperative learning activities within the Blackboard Collaborate™ classroom had assisted the students in understanding course content. Student comments reflecting this improved understanding include:

*“I find it helps to deepen my knowledge, so I watch the PowerPoints or recordings that are on study desk and I think I have an understanding of them, but then I will come to these sessions and it will be deepened” and ...*

*“Makes you think a little bit further outside your own box”*

On nine occasions students made reference to feeling like they were actually working in an on campus classroom even though they were working online:

*“Yeah it definitely feels like a class especially the fact that we all have mikes ... I think it feels different if we are just typing you can't hear our voices and we can't talk to each other yeah, but it definitely does feel like we are in a classroom” and ...*

*“You know as you moved from room to room the screen changed so it really did feel like a physical movement”*

Another key theme that emerged from the data was the development of a ‘Safe Environment’. This feeling of safety was evident in 12 separate student comments. The most telling of these comments came from a student with special needs:

*“I have Asperger's Syndrome so coming into the tutorial tonight I was really stressed because I knew that I would have to go into a group and talk to people I didn't know. I was really stressed while I was doing it but now that I have done it I actually feel quite proud of myself. I did better*

*than I thought I would so I really enjoyed it”*

Other students specifically highlight the ability to know people better and even the benefits of hearing the tone of voice of people as they spoke:

*“Hearing people's tone of voice helps us to establish passion that each of us has behind a topic”*

Some students also identified the value of taking them out of their comfort zone as this would be required when they commenced their career in the classroom. The following comment is representative of those provided in the focus group:

*“So if we can't understand the feelings that we go through when we are a bit nervous and are not sure of something, then we can't expect our students to react differently”*

## **Discussion**

The research team feel that the initial analysis of the online survey and online focus group data supports the notion that using cooperative learning strategies in Blackboard Collaborate™ classrooms can enhance the learning experiences of online higher education students. Thus the first research question can be answered in the affirmative. The aspects of this style of instruction that students found to be most useful very much aligned with the Social Constructivist view of learning given that the focus on real time discussion was highly valued by the students and that this social interaction led to deeper understanding. The development of positive peer relationships and a safe atmosphere for sharing and learning was also seen by students as an important aspect that enhanced their learning. The initial aspiration of the research team to create a ‘near’ on campus classroom experience in the Blackboard Collaborate™ classroom, also, on initial analysis, seems to have been achieved in some measure. The value in investing time in the initial online lessons to develop a group sense of belonging and to make the Blackboard Collaborate tools usable also appear to have aided the safe environment and development of group cohesion.

In relation to the active engagement of students through the use of Discussion Forums, the students have clearly identified that the sole use of this tool as a means of structuring collaborative student work is not sufficient and that it provides the opportunity to withdraw from this process. Student comments identified this was not an option when they participated in cooperative learning activities in the Blackboard Collaborate™ classroom. However, the use of both the Discussion Forums and cooperative learning activities in Blackboard Collaborate™ classrooms is supported by the data gathered in this study.

### **Limitations of this study**

As with any form of research there are limitations which need to be noted in relation to the methodology employed as well as the analysis and synthesis of the data that was collected. Firstly, the use of a convenience sample may not be representative of the whole population of online students and as such the findings may not truly represent this population. Although this is a limitation, the researchers feel that the data described does support the notion that there exists a group of students that prefer the cooperative learning utilised in the Blackboard Collaborate™ classrooms, but the size of this group is not known. In this paper the researchers have presented initial analysis of the data but have not interrogated the data in relation to different demographic groups. Analysis of this form would greatly enhance the credibility of the findings stated.

### **Conclusion**

This paper provides ‘food for thought’ for academics who are already teaching in the online context as well as those in the process of moving into this arena. The use of synchronous applications such as Blackboard Collaborate™ (or equivalent) warrants further investigation as would investigation into the effectiveness of asynchronous tools such as Discussion Forums for different demographic groups. The findings described in this paper are somewhat

understandable, or not surprising, given the dominant Constructivist Theory of Learning (Beetham & Sharpe, 2007); but, these same understandings are challenged when working with students separated from the educator by distance, time and family responsibilities. The challenge is for online academics to think about “pedagogy before technology” (Hutchinson, 2007, p. 3) and to plan so that a “participant in an online activity experiences the activity as if it were taking place in real life, without the mediation of the computer” (Kop et al., 2011, p. 77).

### **Reflections from the researchers**

Whilst implementing the cooperative learning strategies a range of insights were drawn in relation to teaching in the online context. Firstly, the realisation that the development of positive relationships with the students is a critical element no matter what the medium has resonated strongly with the research team. Blackboard Collaborate™ has allowed the team to both get to know a group of their students better and conversely, for the online students to get to know their lecturer better. This has had a range of benefits including more open discussion in class as well as opportunities for pastoral care of students. Secondly, the researchers now are of the belief that most face-to-face classroom activities and discussions can be effectively replicated using synchronous communication tools such as Blackboard Collaborate™. This includes the use of small group discussions, cooperative learning activities, the sharing of group products and so on can be facilitated effectively. Finally, as with any teaching strategy or tool, use of a variety and mix of these tools is critical to meet the diverse learning needs of the students.

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# **Investigating pre-service primary teachers feelings about Mathematics through the use of metaphor**

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## **Abstract**

The use of metaphor as a reflective writing tool designed to explore attitudes towards mathematics has been embraced by researchers in recent years. The potential of metaphor for shifting perspectives is increasingly acknowledged and research has noted the importance of metaphor as a cross-domain mapping tool that bridges the gap between tangible life experiences and abstract concepts such as those fundamental to mathematics. In this study, first year pre-service primary teachers incorporated inventive concepts and contexts in a personal mathematical metaphor to create strong and meaningful images articulating how they felt about mathematics. Participants were taken through a series of steps encouraging them to reflect upon their attitude to mathematics, doing mathematics, and studying mathematics. The culmination of this exercise was the development of a metaphor that described how participants felt about mathematics, or doing mathematics. Data analysis involved first coding metaphors according to three core themes and then determining sub-themes from within each of the core themes. The findings of the study reveal the complexity of participants' attitudes and that despite a perception that these pre-service teachers generally had negative attitude to mathematics there existed a preparedness to approach mathematics in a reasonably positive manner. Further, a different range of metaphors was generated as compared those in an earlier study that focused just on beliefs about mathematics (Noyes, 2006). It may be that this difference arises from the emphasis on how participants felt about mathematics, as compared to what they believed about mathematics. This study indicates that metaphor theory holds further promise as an effective means for exploring pre-service teachers' attitudes and views about mathematics.



## **Introduction**

Many studies have shown that pre-service teachers frequently exhibit negative attitudes and anxiety towards mathematics (see for example McNaught, 2010; Uusimaki & Nason, 2004). Thus, it makes sense for pre-service teachers to be offered opportunities to develop a more positive perspective on mathematics. With this in mind, some mathematics educators have successfully used writing tools and strategies in a variety of approaches to allow pre-service teachers to better understand and articulate their views and attitudes towards mathematics (DiMartino & Zan, 2011; McNaught, 2010; Noyes, 2006). Reflective writing tools and tasks are particularly valuable because of the potential for personal growth that can occur when engaged in such activities.

This study explored the use of metaphor as a writing tool for exploring how students felt about mathematics. Beginning pre-service primary teachers were asked to write a personal metaphor that described how they felt about doing and using mathematics. In recent years, a number of researchers (Noyes, 2006; Pesci, 2003; Schinck, Neale, Pugalee, & Cifarelli, 2008) have embraced the use metaphor as a reflective writing tool that can facilitate exploring views and attitudes towards mathematics. The use of metaphor is particularly valuable because metaphor is more than a simple linguistic tool that can be used to better understand a concept; metaphor is also an instrument that can be used effectively for deeper introspection.

## **Background**

The literature clearly points to the extent of negative attitudes regarding mathematics amongst pre-service teachers (Brady & Bowd, 2005; DiMartino & Zan, 2011; McNaught, 2010). These negative attitudes have often developed because of prior adverse experiences as school students

in mathematics classrooms. One study (Drake, Spillane & Hufferd-Ackles 2001, p.7) notes that accounts of prior mathematical experiences described by pre-service teachers are “dominated by disappointing and discouraging experiences learning mathematics in school. In addition, they all recall losing interest, confidence, or aptitude in mathematics at some time during their elementary or early high school years”. Further, considerable evidence shows that many pre-service primary teachers experience mathematics anxiety and view themselves as incapable of learning mathematics as a result of negative mathematics experiences in school (Uusimaki & Nason, 2004; Wilson & Thornton, 2005; Wolodko, Willson & Johnson, 2003). Thus, the literature suggests that with respect to mathematics, a typical pre-service primary teacher is likely to hold negative beliefs and attitudes, and to be lacking confidence.

These research findings mirror our experience as pre-service teacher mathematics educators. We have been teaching a core mathematics content topic, *Elements of Mathematics*, for all first year early childhood and primary pre-service teachers, since 2012. Overall, our students are a cooperative and good-natured group who usually approach their studies with interest and a sense of fun. However, where mathematics is concerned, our experience has been that for many of them, their positive attitude disappears. They would prefer to do almost anything else than participate in their mathematics workshop. A similar perspective is offered by McNaught (2010), who describes the total reluctance, if not repugnance, of his pre-service primary teachers to studying mathematics. Perhaps the most concerning aspect of this situation is that our students appear not to have seriously considered the fact that they will, in future, actually be mathematics teachers, and that this will be a significant part of their teaching responsibilities. The reality for us has been that our students have viewed this topic as something to be put up with, rather than a learning opportunity that will prepare them to be enthusiastic and competent mathematics

teachers. While the views and attitudes of our students towards mathematics are not unusual, it became evident that we needed to highlight to our students that their views represented a significant barrier to learning mathematics and needed to be addressed. We chose to incorporate student development of a personal mathematical metaphor as a way of helping students identify and articulate their feelings about mathematics, with the aim of assisting them to begin to react in a more positive way.

### **Contemporary Metaphor Theory**

Lakoff and Johnson (2008) and Ashton (1994) have convincingly made the case for the use of metaphors as a theoretical means for framing beliefs and attitudes. Lakoff and Johnson note that, metaphors are critical to meaning making because creating metaphors is central to the way human beings give structure to our experiences. They assert that, “the essence of metaphor is understanding and experiencing one kind of thing in terms of another” (Lakoff & Johnson, 2008, p. 5). Metaphors are thus not just a linguistic device; they capture embodied knowledge and lived experiences (Chapman, 1997). Another essential feature of metaphor described by Ashton is that metaphor “demands the interpreter becomes actively involved in searching for a meaning” (p. 358). For this reason, metaphors are an ideal research tool for bringing to light an understanding of how respondents make sense of the world around them. In this study, our students used metaphor as a tool to articulate how they felt about mathematics. They were able to create strong and meaningful images using inventive concepts and contexts.

### **Research Method**

The participants in this study were first-year pre-service teachers enrolled in either early childhood or primary pre-service teacher education programs. In their programs these students were required to complete a compulsory topic (other institutions may alternatively refer to units

or courses) in their second semester of study entitled *Elements of Mathematics*. The aim of this mathematics content topic was to provide the students with the mathematical foundations they require to successfully teach mathematics in either an early childhood setting or primary classroom. There were over 250 students enrolled in this topic and 104 provided informed consent for their personal mathematics metaphor to be used as data in this study.

The students participated in a workshop teaching activity in the first week of the topic that culminated in writing a personal mathematical metaphor. This teaching activity was based on a similar exercise conducted by Gibson (1994) in a secondary school setting. The workshop instructors took the students through a series of steps designed to have them reflect on their attitudes to mathematics, doing mathematics, and studying mathematics. In the first step, the students were asked to record words or phrases they might use to describe mathematics. Secondly, the students wrote words or phrases to describe what it felt like when they were doing mathematics, or using mathematics. Next, the students compiled a list of objects or phenomena they thought *best* described what mathematics meant to them. Finally, the students created their personal metaphors to describe the way the phenomena or object they had selected and mathematics were similar, specifically focussing on their metaphor described how they feel about using or doing mathematics. The students were encouraged to commence their metaphor with: “*For me, mathematics is like a ...*”.

Data analysis occurred in two coding phases. Firstly, the metaphors were coded according to three core themes adopted from the work of Di Martino and Zan (2011). The three core themes were the students’:

- Emotional disposition to mathematics, as expressed in terms of “*I like/dislike mathematics*”

- \_ Vision of mathematics, as expressed as “*Mathematics is a ...*”
- \_ Perceived competence at mathematics, as expressed in terms of “*I can/can’t do it*”.

Using an approach similar to that used by Schinck et al (2008), the second phase of the coding involved determining sub-themes from within each of the core themes.

## **Findings and Discussion**

### *Core Themes and Sub-themes*

For each of the core themes, a range of sub-themes were revealed in the second phase of coding. Those metaphors that described an emotional disposition to mathematics were associated with key sub-themes that were quite negative in nature, namely that Mathematics is Frustrating/Defeating, and that mathematics is a Necessary Evil. None of the metaphors expressed a positive emotional disposition to mathematics. In the metaphors that principally expressed a vision of mathematics, a more extensive range of sub-themes were revealed. Mathematics was varyingly described as: A Structure; A Skill; A Tool; A Puzzle, Game or Sport; or an Environmental Feature. From the final core theme that primarily expressed a perceived competence at mathematics, two key sub-themes emerged: that mathematics Requires Effort; and that doing mathematics has its Ups and Downs.

Quite a few of the metaphors required code categorisation into more than one core theme or sub-theme. From the 104 mathematics metaphors that were analysed, a total of 173 distinct theme codes were evident; 44 of the metaphors were classified as having just one distinct theme, 49 as having two themes, and 10 as having 3 or more key themes. The Computer metaphor is an excellent example of such a metaphor:

*Maths is like a computer. It can be used to do complex and simple things. Different people use it with different levels of confidence and ability. Sometimes it appears to fail for no reason, but it fails due to processes not working out as it should.*

The metaphorical use of mathematics as a computer adopts the mathematics as A Tool sub-theme, but they then go on to describe how the computer might unexplainably break down, which leads into the Mathematics is Frustrating/Defeating sub-theme. The complex nature of many of the metaphors is typified in this example. Thus, it should be evident that categorisation into a single theme would have not adequately captured the richness of the students' metaphors. Table 1 presents the percentages of metaphors containing codes classified into each core theme or sub-theme.

Table 1. Core themes and sub-themes in personal mathematical metaphors

Core Theme	Sub-theme	Occurrence in metaphors (%)
Emotional Disposition	Frustrated/Defeated	20
	Necessary Evil	13
Vision of Mathematics	A Structure	14
	A Skill	14
	A Tool	12
	A Puzzle/Game/Sport	9
	The Environment	22
Perceived Competence	Requires Effort	43
	Ups and Downs	19

### Emotional Disposition

An Emotional Disposition to mathematics was primarily expressed in 33% of the student metaphors. Most significant is that these metaphors were entirely negative in nature in that not one metaphor expressed anything that came close to a positive emotional disposition to mathematics. The metaphors disclosed, at best, some students' ambivalence to mathematics, as described in the mathematics as a Necessary Evil theme:

*To me mathematics is like that one thing you love to hate eg the Collingwood Football Club. I wish that they didn't exist but realise that the competition needs them to make it interesting. You can't live them but you can't live without them.*

*Mathematics is like cooking. Something I don't particularly enjoy but will attempt purely for the end result.*

*Mathematics is like doing the dishes. It has to be done everyday.*

However, other metaphors that described the students' emotional disposition to mathematics were far more disheartening. A number of students used their metaphor to describe how they were Frustrated/Defeated by mathematics:

*Maths is like shopping for jeans. Frustrating and I usually just give up after a while.*

*Mathematics is like winter. It's very stormy and things can go wrong.*

*For me maths is like a tennis game. You can aim to take control of the situation but when it comes down to the finals, you freak out and get dominated.*

On the other hand, some metaphors articulated the palpable fear that mathematics instills in some of the students:

*For me mathematics is like a nightmare. You are sweaty and feel scared.*

*Maths feels like being stuck in space without a helmet, never-ending, overwhelming and quite fatal.*

*Maths is like the pitch black darkness we encounter throughout the middle of the night – scared of the unknown and just waiting for it to end.*

### Visions of Mathematics

Visions of Mathematics were the most frequency occurring of the categorised theme codes. 71% of the student metaphors primarily included this classification. However, as the students were guided in the teaching activity to think of a phenomena or object which best explained what mathematics seemed like to them this ought not to be surprising. What is worth highlighting here is that with little or no suggesting, the objects or phenomena that the students described formed a reasonably small group of sub-themes that mostly reflect a functional view of mathematics. This mathematics as A Tool metaphor is a clear example of this point of view:

*Maths is like a toolbox. It equips you with the tools you need to build.... But some tools you have no idea how to use!*

Similarly, the mathematics as A Skill metaphors also adopted a utilitarian position. Some of the students drew upon the skills involved with cooking for their metaphor:

*Maths to me is like cooking a pavlova. If you don't put the right ingredients in or use the right methods the food will turn out wrong.*

*Maths is like making a meal when you're hungry. It takes time and effort but once you're finished cooking and you eat, you feel satisfied with your accomplishment.*

Then again, a range of other interesting skills was also offered as a metaphor for mathematics. Of note in these metaphors is the more positive attitude to mathematics that is being expressed:



*For me maths is like riding a bike, once you've figured out how to do it, it's easy.*

*For me mathematics is like shaping clay, hard to begin with but once you get going it gets easier.*

*For me mathematics is like surfing. Sometimes you can hang ten but sometimes you wipe out.*

Some students' metaphors reflected the appreciation of the order and pattern that characterises mathematics through their mathematics as A Structure metaphor:

*For me maths is like jewellery. It has many different components that link together and are built on top of each other.*

*Maths is like an electrical circuit when all of the components are in place the light bulb comes on. When a component breaks down the circuit is cut, and you're left in the dark.*

*For me maths is like an aeroplane. It is organised and structured. There is some freedom but you must end up at the same destination.*

Alternatively, mathematics as A Puzzle, Game or Sport also drew a range of responses. Of particular interest in these metaphors are intraspections that will be addressed further in the next section, that is mathematics as having its Ups and Downs, and that it Requires Effort:

*For me maths is like a jigsaw puzzle. It can be overwhelming at the start with all the pieces mixed up. But when you sort through and find the framework it becomes easier. Focusing on one section at a time to make the bigger picture makes it easier to solve and complete the puzzle.*

*Maths is like a game of Tetris. When things fit it feels good but when it goes wrong it results in frustration.*

*For me mathematics is like a game of paintball. Your head says stop and hide at every obstacle so you don't get embarrassed; your heart says get out there and shoot down*

*anything that comes your way. You may get hit a few times, but picking yourself up and trying again is the only way to succeed.*

*For me, mathematics is like an obstacle course, some challenges are easy, some harder.*

Lastly with regard to this core theme, many students described aspects of the Environment in their mathematical metaphor. For some the environment, like mathematics, needs to be approached with caution:

*Maths is like getting caught in the middle of a storm - cold and scary, and not knowing if there is sunshine on the other side*

*Maths is like an intimidating spider. It manages to crawl into every situation, constantly hovering around until you exterminate the pest.*

For others the environment metaphor was ideal as it could be used to express the Ups and Downs in doing mathematics that will be further discussed in the next section:

*For me, mathematics is like a cloudy day. The sky may not be seen currently, but you know that in the near future it will be sunny again.*

*Maths is like a thunderstorm – chaotic to start with when learning the new concept. But when it all clicks it's like the rainbow at the end.*

*For me mathematics is like the ocean – calm and endless but like an ocean one wrong move or calculation and you will come crashing down only to end up at the beginning of the shore.*

*For me maths is like a fresh breeze. It's fun to walk through, though sometimes the wind gets strong and you can't move.*

It was pleasing to note that a few students created a more positive metaphor for mathematics by drawing upon the environment:

*Maths is like walking through a vast rainforest, full of wonders, and the more you know the more fascinating it becomes.*

*Maths for me is like a snowstorm. Firstly it looks cold and terrible but once you have the right warm clothes you can see the beauty of the snow.*

### Perceived Competence

In general, the students' perception of their mathematical competence provides the foundations for many of their metaphors to the extent that 62% of the metaphors contain a clear indication this core theme. Despite the negativity about mathematics that seems to characterise our student cohort, we were pleased to find within this core theme the students' metaphors revealed relatively positive sentiments with regard to their perceived mathematic competence. The first of the two sub-themes evident in this categorisation was that mathematics Requires Effort. These metaphors articulately described the degree of effort the students' believed was required for mathematical activities, and many also revealed the feeling of satisfaction that results from a successful outcome. For example:

*For me mathematics is like a roller coaster because you put a lot of courage in some cases going onto it and doing it. And after a crazy ride you get off the roller coaster that is maths, and feel pride for having done it.*

*For me maths is like a hamburger because it's complex, has many layers, involves time, sometimes difficult to swallow and on occasions comes with fries when you get it right.*

*For me mathematics is like exercise. It can make you feel accomplished but can also make you sore. Although it is beneficial and important, it is at times hard to get started and to keep going but it is worth it to pull through.*

*For me mathematics is like a sibling relationship. It can take a little extra work when it*

*gets hard but if you don't give up it can be very rewarding and stick with you through your entire life.*

For other students, mathematics comes with plenty of challenging Ups and Downs and perhaps not always a successful outcome. The roller coaster metaphor appears again in this sub-theme but this time it was not such a pleasurable experience:

*Maths to me is like a roller coaster. One minute you are happy and enjoying it because you understand it. Next minute you come down and are really anxious because you don't understand it.*

The Ups and Downs of doing mathematics were also evident in a range of other descriptive metaphors:

*Maths is like a TV signal, sometimes its crystal clear and fun to watch, where other times it just doesn't work, making it a frustrating challenge to fix.*

*For me mathematics is like a battlefield, you have to attack it from different angles until your are triumphant, but sometimes there are casualties.*

*Maths is like watering a plant. A little amount of water added at a time can be beneficial and nutritional but too much at once can feel like you're drowning.*

The results of this study reveal that the first-year pre-service teachers have complex attitudes and views about mathematics, as revealed in their personal mathematical metaphors. Originally we had the view that a generally negative attitude to mathematics pervaded our student cohort, however the metaphors did not overwhelmingly reflect point of view. Undoubtedly a few of the metaphors articulated strongly negative views, but most students metaphors revealed a potential preparedness to approach mathematics more positively. East (2009, p. 22) contends that metaphors “can foreground new perspectives and new insights”. By encouraging our students to

explore their views about mathematics through a personal metaphor we may have been partially successful in achieving this outcome.

An additional important factor in this study has been to not only consider what the metaphors would reveal to us about our students, but also how useful this exercise might have been for them. We did not set out to explicitly measure the value of the using personal metaphors, and whether it changed student perceptions of mathematics; however, previous research has indicated that metaphors are an important learning tool. Kaminski (2003) showed that increasing reflective thinking is likely to improve understanding of mathematics, and generating metaphors is one way of improving reflective thinking. Lakoff and Nunez (2000) add weight to Kaminski's assertion arguing that improving reflective thinking through metaphors is important for learning in mathematics. Our anecdotal observations confirmed that the students were significantly engaged in the metaphor writing activity during class as they were eager to share their efforts with others and to hear what their classmates had created. This incidental class discussion appeared to result in the students openly reflecting on their attitude to mathematics. Thus, it seems evident that creating personal metaphors for mathematics, as foreseen by contemporary metaphor theory, did result in the pre-service teachers thinking in a more in-depth manner about how they viewed mathematics.

## **Conclusion**

In conducting this study we have utilised a metaphor theory framework to explore the attitudes and views of our students, first-year pre-service early childhood and primary teachers, to mathematics and to provide them with a means to intuitively reflect on these attitudes. The personal mathematics metaphors that the students fashioned incorporated inventive concepts and contexts to articulate strong and meaningful imageries of how they felt about mathematics.

Drawing on previous studies, three core themes were adopted to analyse what the metaphors revealed about the students' emotional disposition to mathematics, their vision of mathematics and their perceived competence at mathematics. The findings of this study reveal that the first-year pre-service teachers have complex attitudes and views regarding mathematics. However, despite our pre-conceived view that our students generally had quite a negative attitude to mathematics, the metaphors exposed that, in the main, there existed a potential preparedness among the students to approach mathematics more positively. We believe that on the basis of this reasonably small-scale study that metaphor theory holds further promise as a valuable means for exploring pre-service teachers' attitudes and views about mathematics, and their roles as learners and future teachers of mathematics.

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# **Engaging Gen Y pre-service teachers in online spaces to improve their digital and intercultural competence**

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## **Abstract**

In 2013, as part of a compulsory unit, over 150 pre-service teachers were tutors in an online environment to over 300 school students from Australia, Malaysia, India and Nepal. The eTutor initiative aims to address the challenge of preparing teachers for a more culturally diverse and digitally enhanced classroom by using social media tools to facilitate communication across and between cultures. We report on the challenges teacher educators faced in engaging Gen Y learners in an authentic online cultural exchange. Gen Y learners are positioned as social media savvy, however our experience suggests that teacher educators cannot take for granted the ability or preparedness of Gen Y pre-service teachers to transfer their social media skills from a personal to a professional domain. Using participatory action research, we reflect on pre-service teachers' initial resistance to the online environment and theoretical knowledge and discuss the pedagogical 'choreography' that was required to engage these learners.

## **Introduction**

In this paper we reflect on the challenges we faced when teaching Gen Y pre-service teachers about issues relating to cultural identity and intercultural competence, using pedagogies that explicitly attempted to address the engagement and empowerment of first year university students and that drew on the assumed digital and social media literacies of young people.

### *Intercultural context*

As we move deeper into the 21st century, the importance of having a global outlook is frequently

reinforced. Regardless of the different window dressing by political parties, both want to see Australia better positioned in the Asian Century (Bice & Sullivan, 2013; Commonwealth of Australia, 2012) to take advantage of the shifts in economic and political trends and to identify with our geographical neighbours as cultural neighbours. Australian universities are also looking more globally for future prosperity and partnerships. Our own university has at the heart of its Strategic Plan a goal to be global in attitude, action and presence (RMIT University, 2012). The imperative to teach in more culturally responsive ways and to have a more intercultural worldview is embedded in teacher professional standards (Australian Institute for Teaching and School Leadership, 2012) and in curriculum priorities such as Asia and Australia's role in Asia (Australian Curriculum Assessment and Reporting Authority, 2013).

As teacher educators, we often find ourselves teaching students from very middle class, white backgrounds with little prior experience of diverse contexts. While they consider accommodation of diversity as an important issue, they do not feel comfortable and prepared to deal with diversity in the classroom (Hagen & McGlynn, 2004). During practicums, they often teach in schools with a similar culture as their own or where the aspirational culture is similar to their own (Johnson & Jumani, 2009). Finding ways to engage them in issues of cultural identity and intercultural competence is a significant challenge for teacher educators.

We believe that our teacher education students need to develop rich repertoires of multicultural instructional examples to use in teaching ethnically diverse students. As Gay points out (2001), this is not something that happens automatically or simply because we want it to but is a learned skill.

A traditional response is to offer practicum experiences in overseas countries to provide

opportunities for persuasive personal encounters with other cultures (Scarino & Liddiecoat, 2009). However, whilst highly successful (Santoro, 2013), such opportunities are usually limited to a privileged few. Ways of providing opportunities for personal encounters with people from other cultures for a large cohort is more challenging.

### *Teaching Gen Y learners*

We also find ourselves teaching students who are members of the Gen Y generation, who we are told come with a different set of characteristics that require a different pedagogy (Oblinger, 2003; Prensky, 2012; Tapscott, 2009). They are often reluctant attenders and even less likely to read academic texts, and focus on doing what it takes to ‘get through’ their courses, but will participate enthusiastically if they are engaged in something they consider worthwhile.

The pre-service teachers who were participants in the study that forms the basis for this paper are undergraduates in their first year of a Bachelor of Education course. About three quarters of the cohort were aged between 18-20 years with the majority entering university straight out of school, or having taken a one year ‘gap’ between the end of schooling and beginning tertiary study, or undertaken one or two years study in a different discipline before commencing their teacher education program. They were, therefore, mostly Gen Y learners, also referred to as Generation Next, Millenials, or the Net Gen (Horovitz, 2012). Learners in this generation have quite particular preferences and learning characteristics attributed to them, although with limited empirical data to support the claims. The learning characteristics of Gen Y learners include that they are/have:

- digitally literate – able to intuitively use a variety of IT devices; comfortable using technology but with a shallow understanding; more likely to use the Internet than a library

for research

- always connected – the device may change but these students are always connected
- visually literate, preferring images over text
- averse to reading large amounts of text
- goal oriented and prefer structure over ambiguity
- multi-taskers – often move between tasks quickly, often performing several tasks simultaneously
- a need for immediacy – demanding fast responses, value speed more than accuracy
- have a preference for learning by doing rather than being told, discovery learners
- social learners, preferring team or group work and depend on peers
- open to diversity
- a preference for working on things that matter.

(Adapted from Bullen, Morgan, & Qayyum, 2011)

The literature is clear about the need to engage and empower Gen Y learners, especially in their first year of university study (Bovill, Bulley, & Morss, 2011; Knox & Wyper, 2008). Academics are asked to empower their students by creating a student-centred curriculum through which students can take control of, and responsibility for, their own learning (Knox & Wyper, 2008). Curriculum design should involve active, collaborative and problem-based tasks (Boville, Bulley & Moss, 2011).

#### *Authentic integration of technology*

Gen Y learners are assumed to be tech-savvy and socially connected through social media and related technologies. Academics are therefore urged to use new technologies innovatively for

learning and teaching, not just as a tool for content delivery (Knox & Wyper, 2008; Boville, Bulley & Moss, 2011) but to connect with Gen Y digital preferences. Teacher educators are also urged to integrate digital technologies into their programs in authentically and pedagogically appropriate ways to prepare pre-service teachers to teach with and about technology (Albion & Redmond, 2008).

### **eTutor**

For teacher educators, this context throws up a dual challenge of preparing pre-service teachers to enter multicultural classrooms that require them to teach with a more global perspective, whilst at the same time exposing them to technologically mediated ways of teaching and learning.

In 2011 and 2012 we developed the eTutor project, an online environment designed to facilitate authentic, rich, personal encounters between Australian pre-service teachers and school students from Asian primary and secondary schools. In 2013, with assistance from the Office of Learning and Teaching, the eTutor project was extended to incorporate children from local, Australian schools. Pre-service teachers in their first year of an undergraduate primary teaching qualification undertook a core course based on participation in eTutor. The course aimed to develop the pre-service teachers' understanding about the characteristics of effective educational environments, both face-to-face and online, as well as introducing concepts of cultural diversity and intercultural competence. Through the use of social media tools including blogs, chat, messages and wall posts (Fig. 1), eTutor participants learned about each other and their cultures by exchanging information and working on curriculum projects, tutored by pre-service teachers.



Figure 1. eTutor Home page

Over 150 pre-service teachers and 303 school students from eight schools in four countries interacted with each other in the eTutor environment for approximately 14 weeks in the second half of 2013. Schools that participated in eTutor in 2013 included government schools in small, remote rural villages in Nepal; government schools servicing largely middle class students in north-east India; a private boys school in eastern Malaysia; government primary schools in outer Melbourne suburbs catering to both middle class and socio-economically disadvantaged areas, and a private secondary school in a middle class suburb of Melbourne.

On eTutor, each participant had a profile page, containing a brief biography, and from where they could create blog posts and upload images and videos. Blog posts, images and videos were able to be viewed by everyone who belonged to eTutor. Participants could also exchange private messages and engage in live chat sessions with other eTutor participants.

The majority of communications however, took place within eTutor groups. Students and pre-service teachers were placed into small groups of approximately eight to ten people. Each group had its own space within eTutor, where students could post comments on the group wall, or to other group members' personal wall. Group members could also post comments on each other's

blogs.

Essentially eTutor used forms of social media to facilitate persuasive personal encounters between pre-service teachers and children from different cultures, in overseas and in local schools. eTutor thus used a communication medium that is familiar to GenY learners but for an authentic reason.

### **Reflection on action**

Academics should be reflective practitioners and involved in action research based on their own pedagogical practice (Knox & Wyper, 2008). Through reflective practice on action (Schon, 1983) and participatory action research (Kemmis, 2005) we reflected on the issues we faced in teaching Gen Y learners, of engaging them in online environments and the pedagogical choreography that was required to engage them. We put our own practices and pedagogies under scrutiny, through regular sessions during which we explored why we acted as we did in the design and implementation of the course (Crane & O'Regan, 2010). We shared and discussed our students' reactions to the ideas and the activities we had presented to them. We analysed the students' online participation as well as their conversations and reactions expressed in face-to-face tutorials. We asked the students for their reactions to our approaches and analysed their course evaluations, looking for hints as to how we might improve the course. At every stage we considered how our own and our students' actions and reactions might translate into improvements in how we designed and delivered our curriculum. We worked individually and collectively to deepen our understandings of our own practices in order to transform those practices (Kemmis, 2005).

### **Pedagogical choreography**

Throughout each iteration of eTutor and the associated course, Children Education Settings & Society, our primary aim was to engage our largely Gen Y learners in reading, communicating and reflecting on their own and other cultures. Previous, more traditional attempts at doing so through lectures, tutorials and academic readings and essays were largely unsuccessful. At best, students engaged academically, they read reluctantly, attended begrudgingly and completed assignments with the aim of achieving good results. But they didn't really engage in the sense of devoting a quality of effort to the educational activities we had designed (Hu & Kuh, 2001). So began a pedagogical choreography designed to increase pre-service teacher engagement, by directly responding to the claims about Gen Y learners and their learning preferences.

#### *Connecting with Gen Y digital literacies*

Our Gen Y students are confident and comfortable using technologies, particularly social media so we searched for ways of making meaningful use of technology to help meet our learning objectives of increased intercultural competence. Using the technology to connect to real children from other cultures seemed like a logical step to take. We thought long and hard about the web environment we wanted to construct. We initially preferred asynchronous discussion consistent with the research that it facilitated more focused and purposeful responses (Tallent-Runnels et al., 2006) but wanted to provide for synchronous communication as well to provide a more immediate environment for responses, which increased motivation (Hrastinski, 2008), and appeal to the instant gratification sought by Gen Y learners.

In each iteration of eTutor we responded to changing habits of our students, increasingly gravitating towards the use of collaborative social media tools, expecting our students to respond positively since these were tools our students knew and used constantly. However, many of our



Gen Y learners were slow to engage with our online environment. They seemed not to make connections between their own use of social media tools like Facebook and the use of very similar functions in a different online environment. Initially, many pre-service teachers took days and sometimes weeks to respond to the initial, enthusiastic posts put up by the school children. Our students are seeming unable to readily transfer digital skills that are regularly and frequently applied in their personal sphere to the more professional sphere of becoming a pre-service teacher, reflecting findings of other recent studies (Carr, 2010; Kennedy, Judd, Churchward, & Krause, 2008; Lai & Hong, 2014; Lei, 2009). More support to explicitly build a bridge between personal use and professional use was required from us.

#### *Discovery learners with a preference for structure*

eTutor was designed to provide an authentic experience by interacting with real students in real schools in an online space as a way to discover more about their own culture and the culture of the online students. It was also designed so that pre-service teachers could discover differences and similarities in face-to-face and online teaching. By experiencing what it is like to teach online, in a real setting, we were hoping that pre-service teachers would engage in discovery learning. Earlier eTutor versions were largely unstructured – we provided the online environment and we expected the pre-service teachers to roam, to explore, to play. We asked the pre-service teachers to elicit information about the interests of the students then develop online learning activities that built on those interests.

We found, however, that this approach was too open-ended, too unstructured for Gen Y learners. As a result, each year, we have introduced more structure, with more specific tasks for the pre-service teachers to undertake. We introduced five themes – Festivals, Celebrations, Family,

Environment and Games/Sports – around which pre-service teachers were asked to develop online learning activities. We were giving them permission to explore, to experiment, to see what approaches worked in the online environment with children from different cultures, but the pre-service teachers mostly displayed a reluctance to experiment. In tutorials, pre-service teachers asked us, quite explicitly, to “*tell us the answer*” or “*tell me how to do it and I’ll do it*” or “*the online students have done xyz, how do we respond to that?*” as if there were a single and easy answer that would quickly solve all their problem of engaging multiple students from other cultures in an online space.

We also found that adding more structure meant more coordination across partnership schools. One aim of eTutor was that it did not entail more work for the teachers in the partner schools, that eTutor would fit with their curriculum. Juggling different curriculum priorities across schools was challenging and at times resulted in a lack of common ground between the children from different countries, reducing the opportunity for online interactions.

#### *Prefer to learn and work in teams*

The way eTutor is structured places a high value on teamwork. Pre-service teachers were put into teaching teams – four or five Pre-service teachers were responsible for tutoring small groups (8-10) students online. To be effective as a teaching team required planning and coordination of efforts. However, a preference for working in groups didn’t always translate to working *effectively* in groups. Uneven levels of engagement by pre-service teachers with commensurate variations in their online contributions in some groups lead to tensions and lack of coordination.

#### *Providing activities that involve social interaction*

Participating in eTutor was all about social interaction – between the pre-service teachers and the children and between pre-service teachers and pre-service teachers. However, some pre-service teachers took up to three weeks before they began interacting with their online students, by which time many of the school students had disengaged with the process. Explicit instruction had to be introduced to tutorials to support the pre-service teachers’ online interactions. Regaining the trust of the school children and their willingness to interact was challenging for the pre-service teachers. Social interaction was also challenged by technical and access difficulties experienced in some schools, or by differing school and university calendars that had pre-service teachers and children active at different times.

*Prefer images over text; do not like reading large amounts of text*

Attempts to engage students in academic readings about intercultural competence, culture and its role in education were largely unsuccessful. Students were not engaging with academic readings and could not make connections to them. So we changed tack, and scoured popular media, newspapers, and videos for ‘texts’ that may be relevant to intercultural issues – racism, multiculturalism in schools – in more accessible ways. We met with greater success using this approach, with pre-service teachers engaging more in these types of readings, however, as academics, we were and still are uncomfortable with the lack of academic rigour and connections to theory using this approach.

*Assessing learning and intercultural competence*

With each iteration of eTutor and its associated course, we have (re)designed assessment tasks. Our dilemma has been to develop assessment tasks that help us validate and measure the extent to which the pre-service teachers engage in thinking about cultural identity and intercultural

attributes of teachers. We have always asked pre-service teachers to reflect on their intercultural competence, but at times, we suspect that we are being given responses our students think we want to hear. Gen Y learners are nothing if not expedient, seeking the shortest route to academic success. Assessment tasks are now designed with a view to encouraging engagement in the eTutor online environment. We now analyse and assess their contributions in eTutor, the posts they make and the replies they provide to the eTutor students, not just their reflections about their learning.

eTutor was designed as a way of engaging Gen Y learners in interacting and reflecting on their own and others' cultures and the implications culture has for teaching. It attempts to tap into the learning preferences of Gen Y learners by authentically integrating technology in the form of collaborative social media, and by providing opportunities to engage in discovery learning through engagement with children from multiple cultures, supported with more accessible reading (and viewing) about cultural themes. However, we have found that in order to engage our Gen Y learners in this online space, we have had to make more interventions and teach more explicitly than literature on Gen Y learners would suggest.

## **Discussion and Conclusion**

### *The (im)possibility of the project*

In the Radford Address to the Australian Association for Research in Education Conference in 2009 Bill Green talked about the (im)possibility of the educational project (Green, 2009). Drawing on Aristotlean traditions of *phronesis* and *aporia*, Green argued that teaching is not teachable, that knowledge of teaching is associated with practice and experience, that is, that it emerges from practice-*ing* and is not codifiable knowledge that can simply be transmitted. He

argued that teaching and teacher education is an unresolvable paradox. Teaching involves “the impossibility of knowing enough, of having enough information on the basis of which to make the right decision, in all the urgency and drama of the moment” (Green, 2009, p.4).

eTutor, as a project designed to give pre-service teachers opportunities to interact with and reflect on their own and others’ cultures through an online environment reflects, perhaps, the (im)possibility of the project. eTutor clearly demonstrates the (im)possibility of being able to teach Gen Y learners, or any other learner, how to be an intercultural teacher – becoming intercultural it is an iterative process of development over time (Deardorff, 2006) and emerges out of the practice of being an intercultural teacher. There is no quick fix, no neat checklist of attributes, that if you tick them off, you become interculturally competent. Rather eTutor was designed to give pre-service teachers opportunities to practice being an intercultural teacher. It offers possibilities for the pre-service teachers to experiment and discover more about other cultures their own cultures and teaching in an online space.

But our Gen Y learners do not engage in this online space to the extent we expect, even though we attempt to (re)design a space that meets Gen Y learners’ needs – authentic, uses digital technologies, is collaborative, based on social interaction and connections. So eTutor has evolved and continues to evolve – it now involves children from local schools, so that pre-service teachers more clearly see the connections that intercultural understanding may have for their own teaching; we continue to provide more structure and scaffolding to guide pre-service teachers more explicitly; we work with our partner schools to build stronger connections with common curriculum and more support from involved teachers to help their students engage with the eTutors. We are also exploring different forms of social media and how their use might add value to eTutor and engage our pre-service teachers more. Each year we make modifications to

assessment tasks to help engage the pre-service teachers more authentically, but in ways where we can measure and validate their intercultural competence.

Our aim was to encourage our pre-service teachers to think about connections, the relationships they were building and how culture, including their own culture, helps to shape their teaching and learning practices. We don't present eTutor as the answer, but as an (im)possibility we are wrestling with, at times uncomfortably. We have confidence we are on the right track but we sense there is still something missing. Something else is needed, although we don't quite know what that something is and despite the (im)possibility we keep evolving eTutor. It is a work in progress, but one that is inherently imperfect, incomplete and an unfinished project (Britzman, 2009) or as Bill Green puts it, perhaps an *unfinishable* project (Green, 2009). We continue to choreograph our pedagogy, to fish for what hooks our Gen Y learners, not with the aim of developing a utopian perfectible enterprise, but "to make out of where we are now, and where we have come from, a resource for going on, for moving on, for getting things done, in a World charged with (im)possibility." (Green, 2009, p. 12).

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# **Exploring paired-placements to support teacher learning: A sociocultural activity theoretical perspective**

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## **Abstract**

This paper explores the potential of an alternative placement model, the paired-placement, in facilitating teacher professional learning in a second language teacher education context. The study reported in this paper asks two specific questions. First, does teacher learning occur in the paired-placement context? Second, if it does, what types of teacher professional knowledge are identified?

Methodologically, the study draws upon case-study research of four pairs of Vietnamese pre-service teachers of English over their 15-week paired-placement. Data include individual interviews with the pre-service teachers; observations of the pairs' co-taught lessons; video-recordings of planning meetings and lessons; and relevant artefacts such as instructional materials. Theoretically, the study is grounded in Vygotsky's (1978, 1981) sociocultural theory of learning and third generation activity theory (Engeström, 1987, 2008). Deviating from the conventional conceptualisation of learning, the study views 'contradictions' in the pair-work as sources of change and development.

The findings across the four pairs reveal that the paired-placement was conducive to teacher professional learning. Teacher learning opportunities were initially manifested in contradictions in the teacher pairs' joint-activity. However, as a result of resolution of contradictions in their joint-activity systems over time, all the pre-service teachers demonstrated growth in teacher professional knowledge (Shulman, 1987). Their growth was most evident in terms of pedagogical content knowledge, general pedagogical knowledge or broad teaching principles and strategies, and knowledge of the learners and their characteristics. Further, the findings suggest that within the paired-placement context, the pre-service teachers changed not only in cognition but also in practice. While highlighting the paired-placement as a promising model, the study offers a new approach of conceptualising teacher learning in such collaborative settings, suggesting a new line of inquiry capable of many further applications.

**Keywords:** Vygotsky; sociocultural activity theory; contradictions; pair-placement; teacher learning; teacher professional knowledge

## **Introduction**

Efforts have been made at the national and local levels in many countries in their educational reforms to help improve the quality of teacher education, as a way of improving the quality of education more broadly, in the belief that teachers are both ‘subjects and objects of change’ (Villegas-Reimers, 2003, p. 7). In Australia, for example, a number of reforms have been focusing on “improving the effectiveness and capability of the teaching profession in Australia” (Gonski et al., 2011, p. 215). These include the introduction of Australian Professional Standards for Teachers at different points in their career, starting from initial teacher education. Different models of teacher education have also been explored (Hudson, Hudson, & Adie, 2013).

Against this backdrop, over the past decade the centerpiece of teacher education reform worldwide has involved improving the quality and extent of pre-service teachers’ field experiences (Nokes et al., 2008; Villegas-Reimers, 2003). New models of field experience, including those that challenge established practices and understandings about teaching and learning to teach, have been promoted (Bullough et al., 2002; Nokes et al., 2008). This paper explores the potential of one such model called the paired-placement in facilitating teacher professional learning in a second language teacher education context. It reports on part of a larger PhD research project conducted in the natural setting of an English teacher preparation program at a Vietnamese university during a 15 week period. The study reported in this paper asks two specific questions. First, does teacher learning occur in the paired-placement context? Second, if it does, what types of teacher professional knowledge are identified?

The paper first introduces some background literature on paired-placement and teacher knowledge, basic tenets of sociocultural activity theory and their implications to this study, followed by its methodology. The findings and discussion section continues to report and discuss findings concerning the growth of the pair-placed teachers in different domains of teacher professional knowledge. While highlighting the paired-placement as a promising model, the study also offers a new approach of conceptualising teacher learning in such collaborative settings using a sociocultural theory perspective.

### **Background Literature and Theoretical Framework**

To address its research questions, the study draws on the literature on paired-placement and teacher professional knowledge, and Vygotsky's (1978, 1981) sociocultural theory of learning and third generation activity theory (Engeström, 1987, 2008).

#### *Paired placement*

Paired placement is a model in which pre-service teachers are placed in subject pairs rather than individually. Over the last ten years, there has been increasing interest in this model of teacher placement in different parts of the world, mainly reported in Western contexts. These include North America (e.g., Bullough et al., 2002; Grierson et al., 2011; Nokes et al., 2008), the UK (Sorensen, 2004), Ireland (Eaton et al., 2009), and Australia (e.g., Walsh & Elmslie, 2005). These studies highlighted the multiple benefits of paired placements for teacher learning during practicum, and invited further investigation into this mode of teaching practice (Sorensen, 2004). The pre-service teachers were reported to enjoy a rich learning experience because of the tensions, dialog, reflections, and increased support that grew out of being placed with a peer (Bullough et al., 2003, Nokes et al., 2008). The question is still left open as to how these pair-work factors, such as tensions, mediate teacher professional learning, and what specific types of

teacher professional knowledge are facilitated in a paired placement context.

### *Teacher professional knowledge*

Shulman's (1986, 1987) conception of teacher knowledge, although contestable (see Bullough, 2001; McEwan & Bull, 1991), could provide a point of reference for considering the types of knowledge pre-service teachers need to develop. The application of Shulman's concept in this study does not suggest an argument that the preparation of teachers be reduced only to the development of professional knowledge. Rather Shulman's concept could be useful in exploring teacher's growth in this domain of learning. The study indeed has reported growth in teacher professional identity as a result of paired-placement (Dang, 2013) as well as global elements that impact on their learning (Dang, 2012; Dang & Marginson, 2013; Dang, Nguyen, & Le, 2013).

Shulman (1987) argues for the need of teachers to develop various types of professional knowledge such as subject content knowledge, general pedagogical knowledge, knowledge of learners and their characteristics, and pedagogical content knowledge (p. 8). Among these categories pedagogical content knowledge "identifies the distinctive bodies of knowledge for teaching [...] distinguish[ing] the understanding of a content specialist from that of the pedagogue" (p. 8). It refers to an understanding of how specific content areas could be organized and adapted to diverse learners, and presented for instruction. Pedagogical content knowledge "goes beyond knowledge of subject matter per se to the dimension of subject matter knowledge for teaching" (Shulman, 1986, p. 9). It represents the "blending of content and pedagogy" (Shulman, 1987, p. 8) specific to particular subject matter. General pedagogical knowledge refers to "those broad principles and strategies of classroom management and organization that appear to transcend subject matter" (Shulman, 1987, p. 8).

Discussing professional education, Shulman (2005) also highlights the need for some degree of

tension and dilemma, which he refers to as ‘pedagogies of uncertainty’, for professional learning to occur. He notes: “[w]ithout a certain amount of anxiety and risk, there’s a limit to how much learning occurs” (2005, p. 22).

### *Sociocultural activity theory*

Third generation activity theory (Engeström, 1987, 2008) closely linked to Vygotsky’s (1978, 1981) sociocultural theory was developed to help to explain the influence of sociocultural historical contexts, or the so called ‘social settings’, on human activity. In this study, the combined framework is used to shed light on how the teacher pairs’ joint-activity of learning to teach plays out in the complex settings of the paired-placements. At the heart of the framework are the concepts of mediation and contradiction.

Socio-cultural theory recognizes the central role of social relationships and culturally constructed tools and artefacts in mediating human forms of thinking and development (Vygotsky, 1978, 1981). Mediation by artifacts “breaks down the Cartesian walls that isolate the individual mind from the culture and the society” (Engeström, 1999, p. 29). Following McNicholl and Childs (2010), in sociocultural theoretical terms, teacher knowledge, including learner knowledge, pedagogical content knowledge and subject content knowledge (Shulman, 1987) above mentioned, operates as a mediating artefact.

Contradictions are defined as tensions between two or more components of the activity system (Engeström, 1987, 2008). Such systemic contradictions are the key to understanding the sources of trouble as well as the innovative and developmental potentials of the activity (Engeström, 1995, cited in Engeström, 2008). Indeed, “the importance of contradictions to activity theory is that they serve as indications of both discordance and, more positively, potential opportunities for intervention and improvement” (Barab, Evans and Baek, 2004, p.

208).

In adopting a sociocultural theoretical perspective of learning, the study views ‘contradictions’ in the pair-work as sources of change and development. Contradictions within this study can include the tensions created by differences and conflicts between teacher pair partners in terms of their level of appropriation of pedagogical tools. By examining the trajectory of contradictions facing pair-placed teachers over a period of time, it is possible to identify the actual development that occurred and the potential development that could be achieved.

### **Methodology**

This research adopts a case study method (Yin, 2003) to investigate four pairs of female pre-service teachers in a fast-track teacher education program at a Vietnamese University during their 15-week placement. In the final year of their 4-year B.Ed (TEFL) course, under the supervision of their university lecturers, these teachers worked in pairs for the planning and teaching of English lessons to first and second year mainstream students. Each pair taught a total of four lessons. All the lessons were observed by the university lecturers and other pre-service teachers in the cohort. Each lesson was followed by a feedback session among the lecturers and the pre-service teachers.

Data include 40 post-teaching round individual interviews with the pre-service teachers; 16 observations of the pairs’ co-taught lessons; video-recordings of planning meetings and lessons; and relevant artefacts such as instructional materials. The observations, video-recordings, and instructional artefacts provided observable aspects of the teachers’ learning experiences. Post-teaching round in-depth interviews of over 1 hour long each on average provided further insights into pre-service teachers’ process of learning to teach English in paired placements.



For data analysis, interviews formed the primary data source for the research while the other sources, i.e. observations, video-recordings and artefacts, helped to triangulate findings from the primary source. The interview data was analysed using Transana, a software package designed for the transcription and qualitative analysis of video and audio data. For each teaching round performed by each pair, the two individual interviews with the pair partners were analysed, compared and contrasted to identify contradictions present within their joint-activity. The identification of contradictions helped to point out the tensions or challenges the teachers experienced when planning and teaching in pairs. The re-construction of the developmental trajectory of the contradictions throughout the practicum would reveal if the contradictions were resolved or not over time.

## **Findings and Discussion**

Findings from this study showed that all the pairs experienced tensions caused by differences between partners in terms of their level of appropriation of pedagogical tools and their perceptions towards student teaching and the students. However, the resolution of the contradictions led to pre-service teachers' growth in teacher professional knowledge (Shulman, 1986, 1987). The growth was most obvious in the domains of: 1) knowledge of the learners and their characteristics; 2) general pedagogical knowledge; and 3) pedagogical content knowledge.

### *Knowledge of the learners and their characteristics*

Findings from this study suggested that the pre-service teachers entered the practicum without adequate knowledge about the students, which is a common challenge for teacher education (Bullough et al., 2003; Westheimer, 2008). This challenge, coupled by pair-partners' differing perceptions of teaching could create tensions in pair-placements. The findings also revealed that paired teachers' active engagement with the student teaching and partners' collaboration to

resolve contradictions resulted in their greater understanding of the learners and their characteristics (Shulman, 1987) towards the end of the practicum.

Take Ngân-Hà pair as an example. Ngân and Hà's shared object of improving student learning became difficult to achieve when they realised they lacked knowledge about the students' level of English. Because the pair misjudged their students' ability to use English, their first lesson on English pronunciation became challenging to them. The instructional activities they designed were not suitable for the students. Hà reflected upon the lesson:

*I thought that the differences between the two sounds were quite obvious, listening in the (online) dictionary myself, so it should be clear to the students. However, when I turned on the recording in class, the students were so confused. They could not distinguish the sounds. I thought I had 'over-assessed' their level [of English]. (Hà, Rnd1, p. 14)*

Reflecting on the incident, Hà later said, *"I think we have to understand the students more in order to teach well"* (Rnd1, p. 21). For Hà, the object of student learning now also meant better understanding of the students. Like Hà, Ngân realised: *"We did not understand the students enough... we thought it would take them this amount of time to complete the task, but in reality, it took much longer"* (Rnd1, p. 5).

In their subsequent lessons, Ngân and Hà worked together to resolve this contradiction to achieve student learning. New pedagogical tools, such as using glossaries for reading tasks (lesson two) and providing background reading activities (lesson four) to scaffold student learning, were created. As a result of their continuous reflection and practical action, the contradiction was mostly resolved in the last lessons.

Reflecting on the fourth lesson, Hà demonstrated a growing understanding of the students:

*From the previous lessons, I realise that it took them long to brainstorm ideas. They also could not categorise their ideas. They were at the stage of just being able to brainstorm what they*

*think. They still do not know... for instance, eliminating overlapping ideas, grouping ideas, or elaborating on ideas. (Hà, Rnd4, p. 9)*

Hà became more articulate about the capability of the students, compared to the early rounds. Responding to students' learning needs also required her to be confident, spontaneous, and flexible in class.

Similarly, Ngân demonstrated her sophisticated growing understanding of language teaching and of her students in the final lessons. Reflecting on the third lesson, Ngân recalled:

*We were trying to do fewer activities but more carefully. With each section, both Hà and I agreed that: 'let's allow the students do at their pace, let's still correct [carefully]'... so because of the time constraint, we could do fewer activities, but rather than rushing. Not covering the whole lesson as planned, but the students could learn several things. (Rnd3, p. 23, Ngân's emphasis)*

This extract suggests that the teachers' increasing knowledge of the learners also informed their pedagogical strategies and practices both in planning and teaching the lesson. Findings of this study thus support the potential of peer interaction in paired-placements to promote the development of knowledge about the learners, essential for teacher preparation.

#### *General pedagogical knowledge*

The data of this study also revealed pre-service teachers' growth in general pedagogical knowledge or broad teaching principles and strategies (Shulman, 1987). For instance, several pre-service teachers appeared to experience transformation in their conception of lesson planning and also in their practices. They seemed to learn to become flexible and responsive to students' learning needs. Others developed other general techniques to address student learning: Vân seemed to internalise Th o's technique of using humour, and Hi n gained a nuanced understanding about how to correct students' works from co-teaching with Chinh. This finding

corroborates the literature which documents teachers' growth in professional knowledge as a result of paired-placements (e.g. King, 2006; Sorensen, 2004; Vickery et al., 2011).

Take Chinh – Hi n pair as an example. Chinh's professional growth is illustrated in the transformation in her perception of the lesson plan in the last round as a result of working with Hi n over time. She moved from being faithful to the lesson plan (in the early rounds) to seeing the significance of being flexible to address students' learning. Chinh initially viewed the lesson plan as rigid and she must *"follow that direction, to stick to it from beginning to the end"* (Rnd1, p. 22). In round two, she felt pleased, commenting: *"our lesson went smoothly, almost as planned, not many changes"* (Rnd2, p. 12). As Hi n differed from Chinh in her perception of lesson plan, contradictions emerged. During their co-teaching, the lessons diverted from the original plan. In the last lesson, they synchronously and spontaneously changed the follow-up activity. In her reflection of the events, Chinh commented:

*I think Hi n just wanted to improve the work, the product. That explained why we changed activity one, from the other reading text to this one, and why our actual follow-up was different from our planned one. (Rnd4, p. 16)*

*The decision to change the follow-up activity was like both of us taking a spontaneous leap at one snap, like taking full risk. (Rnd4, p. 31)*

As Chinh became more aware of the rationale behind Hi n's changes in planning and teaching, the tension eased off. She had learned that lesson plans should not be rigid, finally saying:

*Everything was changed a bit, a lot compared to the plan, but more effective, I think more effective than in the original plan. (Rnd4, p. 16)*

She realized that the lesson was more effective with the changes than it would have been if the original plan was followed. The trajectory of the development of Chinh's perception of lesson planning suggests that their dyadic interactions mediated Chinh's cognitive change, which

moved from the interpsychological plane (Vygotsky, 1981) during her dyadic interactions with Hien to the intrapsychological plane as she reflected on the process.

### *Pedagogical content knowledge*

Paired teachers' growth was most evident in terms of pedagogical content knowledge (Shulman, 1987), i.e. the pedagogical knowledge to teach English in this study. For example, Hà learned different strategies to scaffold students' English language learning, such as adapting reading materials, from working with Ngân. Reflecting on an instance in lesson two when her pair tried to adapt reading materials to the students, Hà said:

*Interestingly, Ngân recommended providing new words in the margin [of the text]... Ngân said that some books often put new words in the margin, and so we decided to use that strategy. I like the idea, which I had never used before. This lesson was not about testing the students, but reviewing skills and help them apply tips effectively. And so having a glossary is fine, and indeed it made students less discouraged when doing the task. (Rnd2, p. 5)*

As this extract reveals, the dyadic interactions and her reflection-on-action (Schön, 1987) triggered Hà's awareness about using glossaries to modify the difficulty of reading tasks to achieve student learning. This extract illustrates her cognitive development first appearing on the interpsychological plane between the partners in their interactions, and then on Hà's intrapsychological plane (Vygotsky, 1981). It also suggests that her development was scaffolded through problem solving "in collaboration with more capable peers" (Vygotsky, 1978, p. 86). In the same pair, Ngân developed a sophisticated understanding of the role of input and output in ELT from co-planning with Hà.

As another example, the process of co-planning with Hu challenged Mai's conception of English teaching, and transformed her beliefs about motivating students to learn English. Reflecting on the co-planning incident when her idea was rejected and on the co-teaching

when her partner's idea was enacted and welcomed by the students, Mai admitted:

*I just wanted the students to do some short reading sentences [for the warm-up] but now I think it would be the wrong thing to do... After I had typed up the sentences, Hu said we should still keep the pictures. That would be more lively and fun. (Rnd2, p. 5, Mai's emphasis)*

She later explained:

*Because just [having the students] sit reading could not warm them up, Hu said: "Let's do the picture activity so that it can be lively." I found that was right. The students were happy, and even those who never spoke would also speak up... So I think it sort of involved the students [in the lesson]. (Rnd2, p. 14)*

The above excerpts demonstrate a transformation in Mai's perception of student motivation when teaching English. It enabled her to view student motivation from a different perspective, resulting from her dialogue with Hu during co-planning, her observation of the enactment of Hu's idea during co-teaching, and her reflection on the process (Schön, 1987). This transformation appeared to derive from the dyadic interactions on their interpsychological plane, and then within Mai on the intrapsychological plane (Vygotsky, 1981).

This finding is consonant with extant research on paired-placement which emphasizes the role of peers in problematizing issues in teaching and triggering pre-service teachers' growth in pedagogical content knowledge (e.g., Manouchehri, 2002).

## **Conclusion**

The findings across the four pairs suggest that the paired-placement was conducive to teacher professional learning. Deviating from the conventional conceptualisation of learning, this study views 'contradictions' in the pair-work as sources of change and development. Teacher learning opportunities were initially manifested in contradictions in the teacher pairs' joint-activity. However, as a result of resolution of contradictions in their joint-activity systems over time, all

the pre-service teachers demonstrated growth in various domains of teacher professional knowledge, namely the knowledge of the learners, general pedagogical knowledge and pedagogical content knowledge (Shulman, 1987).

Together with growing research on pair-placement around the world, this study on pair-placement in a Vietnamese context suggests a place for pair-placements in teacher education reforms. Pair-placement can be a promising model of practicum to improve the quality of teacher education. However, viewing resolution of contradictions as conducive to teacher learning, the study has implications which would be useful to optimize the conditions of learning in paired-placements. More research along this line of inquiry in other sociocultural contexts is needed.

As an initial attempt to explore how pair-work mediates teacher learning, the study also suggests the relevance of sociocultural activity theory and the notion of contradiction in elucidating teacher learning processes in the pair-placement settings. It is likely to open a new line of inquiries into teacher learning in such collaborative settings using this theoretical framework.

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# **Do Teachers' Professional Standards create teacher professionalism? A perspective from England.**

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## **Introduction**

Teacher professionalism has been an important topic for two successive governments in England. Each government has introduced a set of standards for teachers which are deemed to increase the professional status of teachers, but through the very act of being imposed have threatened the autonomy of teachers. The nature of professionalism and standards which are thought to measure this is an ongoing discourse in education in England. It has implications for in-service teachers, newly qualified teachers, students who are becoming teachers, tutors who work with students, schools, parents, children and the wider public. All of us are affected by education and those who work in it at some point in our lives and having good quality teachers is vital for successful learning and for the economic and social welfare of the country. However, this paper questions whether externally imposed standards provide an appropriate environment for teachers to be fully professional, or whether the obligation to adhere to such prescribed requirements hinders what it sets out to achieve.

## **What is Professionalism?**

Gewirtz *et al* (2009, p. 3) acknowledge that 'professionalism is an idea that points in many different directions'. These include the notion of a profession as being a way of classifying the status of occupations, as well as the ideals expected of professional workers such as specialist

expertise, trustworthiness and service. Linked with the notion of being a professional, is the exclusionary nature of the profession to which the professional belongs. Becoming admitted to the ranks of the profession involves a period of professionalisation whereby the person concerned takes on the codes of behaviour and practice expected of the particular profession. Goodson (2000, p. 182) defines this professionalisation as being ‘concerned with promoting the material and ideal interests of an occupational group’, whereas he considers that professionalism ‘is more concerned with the intricate definition and character of occupational action’ (*Ibid*, p. 182).

Hilferty (2008, p. 161) considers that teacher professionalism is a ‘socially constructed term that is constantly being defined and redefined through educational theory, practice and policy’ while Demirkasumo lu (2010, p. 2048) considers that professionalism can be interpreted as a ‘multi-dimensional structure including one’s work behaviours and attitudes to perform the highest standards and improve the service quality’. In contrast, Evans (2011, p. 885) suggests that professionalism is ‘something that applies to every occupational workforce...but is qualitatively neutral’. She suggests that professionalism is a description of people’s ‘mode of being’ within the work context whether their practice is to be commended or deplored. In this way she considers that the term unprofessional is redundant. This view of professionalism is at odds with that held by Onora O’Neill, who at the BERA conference in London in 2011, recounted her indignation at seeing the phrase ‘professional carpet fitter’ on a van, considering that this was a gross denigration of the term professional. However, it would seem that Evans would have considered this phrase to be appropriate as her definition allows for the ‘professionalisation of everyone’ (Williams, 2008, p. 534).

Perkins (1996, p. 472) observes that in the late 20<sup>th</sup> century in the UK, there has been a ‘backlash against professional society’. Certainly the status of teachers as professionals is challenged by the media, the public and by successive governments with their increased control and imposition of expectations including the use of professional standards. Perkins goes on to state that ‘no professionals have been more exactingly criticised or resented when they fail to come up to expectations than the so-called ‘caring professions’’ (*Ibid*, p. 483). Such groups include nurses, teachers and social workers all of which do not carry the same professional status as doctors and lawyers and as such are considered to be semi-professional (Etzioni, 1969, p. 144) .

In becoming a professional Jackson considers expert knowledge is gained which leads to a ‘distinct mystique’ (1970, p. 7). This carries with it the values which society holds in high regard and therefore maintains the status of that particular profession. This is perhaps easy to see with doctors and lawyers where it is also possible to recognise the power which comes from formal academic training and which includes opportunity for socialisation and initiation into the wider professional group. However, for teachers, the ‘distinct mystique’ is considered to be weak as through mass education, the tasks which teachers carry out are considered to be ‘within the general competence of those who have been taught themselves’ (*Ibid*, p. 14).

Tichenor and Tichenor (2005, p. 90) suggest the most basic way of defining a professional teacher refers to the status of being paid to teach, but that on a higher level it refers to ‘teachers who represent the best in the profession and set the highest standard for best practice’. This is more consistent with the view of Schön who considers that professional practice involves responding to a unique problem with ‘a kind of improvisation, inventing and testing in the situation, strategies of her own devising’ (1987, p. 7). It is operating in such ‘indeterminate zones of practice’ which causes the practitioner to grapple with uncertainty, complexity,

uniqueness and conflict of values which are crucial to professional practice and which define the professional.

### **Professional Standards and Professionalism**

Professions which have a high level of professional standing such as medicine, have strong professional bodies to protect their autonomy and cushion them from too much government regulation. For teachers in England, there is no such body. The General Teaching Council for England (GTCE) existed for 14 years and was disbanded in 2012 by Michael Gove, who was until recently, the secretary for Education. The GTCE was an independent body made up of teachers and others linked to education. Part of its remit included a Code of Conduct and Practice for registered teachers which allowed for the monitoring of their own practice and behaviour, with a set of disciplinary measures being outlined for those who transgressed these professional expectations. The GTCE was replaced by an executive agency of the Department for Education, the Teaching Agency (TA), which itself has now been replaced by the National College of Teaching and Leadership (NCTL) and is also strongly dominated by government influence. This body has responsibility for the supply and training of high quality teachers as well as teacher regulation and the development of policy for education. As such, it has a considerable amount of power over the teaching profession and as a result, the opportunity for teachers to influence their own professional lives and practice is reduced.

McCulloch *et al* maintain that tied in with ideals of teacher professionalism is the assumption that teachers should control the curriculum, determining what is taught and when (2000, p. 13). The Labour government brought in a National Curriculum in 1988, which brought with it, prescriptive Programmes of Study and assessment of children's progress, thus reducing the opportunity for teachers to exercise professional judgement regarding what they should teach and

how it should be assessed and thereby requiring compliance and adherence to government expectations. This was strongly resented by teachers, as they felt their professional status was being reduced. As a result, this initiative was resisted and teacher's morale lowered (Lofty, 2003, pp. 198-199).

At a similar time, the first set of National Standards for teachers was introduced which defined role expectations and set benchmarks for performance (Green, 2004, p. 2). Additionally, the school inspection process lead by the Office for Standards in Education (OFSTED) was introduced which brought about even tighter regulation of the teacher's work and practice. All of these initiatives served to reduce teacher autonomy and to increase teacher accountability which in turn leads to low teacher morale. The current government's own White Paper *The Importance of Teaching* (DfE, 2010, para 1.2) reports that 43% of teachers consider the status of teaching in England is perceived as low while teachers and head teachers feel they are constrained by government directives and improvement initiatives. These imposed expectations lead to teachers focusing on meeting government targets rather than the needs of children and as such are responding to skewed educational priorities. As Evans states, teachers' professionalism in England is imposed, with boundaries being set externally regarding expected roles and responsibilities (2008, p. 23).

The government in England specifically considers that teachers should be more accountable for student performance and to parents for how money is spent, including being able to make comparisons between different schools and the value for money they offer (DfE, 2010). These measures along with Teachers' Standards are ways in which teachers are held to account. However, Onora O'Neill in the Reith lectures (2002) considers that this 'revolution in accountability' encourages 'perverse incentives' which lead to 'arbitrary and unprofessional

choices' and dictates institutional behaviour (lecture 3). In Teacher Education in England, this can be seen with the current Ofsted ruling that trainee teachers should not be graded as 3 – satisfactory, as this is no longer good enough. Grade 3 has been replaced by the notion that the student has met the Teachers' Standards to a minimum level only. When Ofsted carry out their inspections of Universities, if there are any students who have met the Standards at a minimum level, then a justification for this grading is required along with evidence of any intervention programme to support the student's development. Many universities have revisited their grading systems in order to reduce the likelihood of students being graded at 'minimum' and to bolster their chances of gaining as many students at 'outstanding' as possible and thereby placing themselves advantageously for Ofsted. Therefore, while in England there are National Standards for teachers and trainees, the interpretation of these standards varies according to the priorities of the institution which applies them. O'Neill suggests that the requirement for professionals such as teachers, to respond to the imposed incentives such as described above, rather than 'pursuing the intrinsic requirements for being good ....teachers' (2002, p. 3) breeds a culture of mistrust and criticism rather than the development of public trust.

While a number of iterations of Teacher's Standards have been introduced since 1998, the coalition government in England which came into power in May 2010 set about reducing what was then, thirty three existing Teachers Standards, to the current eight. These Standards are divided into Part 1 and Part 2, with Part 1 being concerned with the practice of teaching, while Part 2 is concerned with 'the non-negotiable expectations of terms of teachers' behaviour and conduct' (DfE, 2011, p. 7) . Part 2 of the Standards replaces what was the remit of the GTCE's Code of Conduct and Practice and relates to a teacher's personal and professional practice as well as matters of misconduct. It requires teachers to 'uphold public trust' (DfE, 2011, p. 14)



through professional qualities such as respect and tolerance, but also requires them to ‘**not** undermine fundamental British values’ such as those relating to freedom, democracy, faith and beliefs. The term ‘fundamental British values’ is problematic for many, including those who are judging or being judged by such a Standard, as it is unclear as to what exactly these values are. However, what is clear is that the inclusion of this statement is related to the *Prevent* Strategy, presented to the government by Theresa May the Home Secretary for England in 2011. This strategy warns that Britain is highly likely to be in receipt of a terrorist attack from Al Qa’ida and that radicalisation and extremism will not be tolerated. Adding a Standard about ‘fundamental British values’ for teachers to adhere to as part of their professionalization and ongoing professional practice; draws them into becoming an arm of government policy as a requirement and imposition, rather than allowing the teacher to exercise their own professional judgment and sense of reason about such matters. It is a clear example of the politicisation of the teaching profession and draws teachers away from the core business of learning and education.

It would seem that teachers are not trusted by the government to make and act on sound professional and educational decisions without strong guidance. Nor were they consulted as to whether the inclusion of a Standard relating to ‘fundamental British values’ would be helpful as a safeguard for the profession or even the nation. Indeed, in my many conversations with teachers in school, tutors in the university and the students themselves, no-one really seems to pay much attention to this particular Standard, nor to understand its significance. They seem to be unaware of the implications of the responsibility that is placed on them by the government in being the defender of British values. Part 2 of the Standards also requires teachers to know about and adhere to other relevant statutory frameworks as well as school specific policies and practice.

Part 1 of the Standards is more concerned with what is considered to be the core business of teaching and can be summarised as follows:

- Set high expectations which inspire, motivate and challenge pupils
- Promote good progress and outcomes by pupils
- Demonstrate good curriculum and subject knowledge
- Plan and teach well-structured lessons
- Adapt teaching to respond to the strengths and needs of all pupils
- Make accurate and productive use of assessment
- Manage behaviour effectively to ensure a good and safe learning environment
- Fulfil wider professional responsibilities

These Standards are applicable for all trainee teachers and must be attained in order to qualify as a teacher. However, the same Standards are also applicable to newly qualified teachers (NQTs) and those of considerable experience. While it is expected that teachers will continue to develop their practice while continuing to meet the Standards to greater depth and according to the role they are fulfilling; this is different from the previous 33 Standards where a clear structure of career progression was set out taking the teacher from newly qualified, through to Threshold and on to Advanced Skills Teacher with differentiated Standards to match. Interestingly when the differentiated Standards were first introduced, teachers were alarmed at the prospect of needing to jump through further hurdles in order to prove their competence as a teacher. However, now this is no longer necessary, there are some who are disappointed that this clearly defined system for demonstrating ability is no longer in place and that other methods of proving worthiness for career advancement have to be provided. As teachers in England have no

professional body to advocate for them on these matters, this can be seen as another way in which the government is emasculating the teaching profession.

Additionally with the power invested in Ofsted which can put schools into Special Measures if they are deemed to have teachers who are not meeting the Standards to a sufficient degree, teachers are constantly expressing their professional practice in a way which complies with government regulation and expectation. Thus the government has another lever through which it can demand certain behaviours which it believes will result in greater professionalism, seeing this as performance and accountability, but all the while trimming the scope for autonomy, which teachers would see as an essential part of professionalism. This highlights the complexity of the term professionalism and also the way in which the position of different stakeholders affects how this term is perceived.

I note a similar position is emerging in Australia. Susanne Gannon (2012) in her paper on the analysis of the *National Professional Standards for Teachers* in Australia, comments on the way the Standards, alongside the mandatory NAPLAN testing of students and the Australian curriculum are part of the government's package for standardising reforms (p. 61). Similar claims are made about how Standards improve teacher quality which in turn improves student attainment. However, Gannon questions this, stating 'It assumes that teacher quality is a factor that is isolable and the property of individuals, rather than both contingent and relational' (*Ibid*, p. 61). Furthermore, Gannon remains suspicious of the impact of Standards on professional practice, suggesting that the Standards become 'a disciplinary apparatus through which teachers engage in surveillance of themselves and each other....and through which the sovereign authority of the state can regulate a discrete segment of population' (*Ibid*, p. 61). In terms of a definition of professionalism which includes some degree of autonomy, then it would seem that

teachers' professionalism in Australia is set to follow the same route as England in how it is gradually being eroded through increased external intervention.

This paper set out to discuss whether government imposed standards for teachers will create or inhibit professionalism. From what has already been discussed, it would seem that it might depend where you are standing and what you consider the expression of professionalism to be. Successive government intervention has seen teachers being more and more demanded of in the bid to drive up attainment, to increase performance and to provide better value for money. There is much greater accountability to parents, governors and to the public than previously. Data is provided about schools, which enables parents to make sound choices about where their child might be educated. Additionally, there are clear requirements of the teacher with regard to the curriculum and a strong body for monitoring performance. All of this might well fit what seems to be the government expectation of a high functioning professional and may fit the requirements of some parents who are increasingly seen as consumers in the education market. However, for the teacher, the lack of autonomy, the constraints on professional decisions and judgement, the requirement for ever demanding performance and the poor public image of teachers, has led to teachers feeling they are 'constrained and burdened' (DfE, 2010, para. 1.2).

It is highly unlikely that governmental pressure for the reform of the teaching professional will abate and with it the requirement to raise pupil attainment. Increasingly education is being framed within the competitiveness of the world economic market and teachers are seen as key to making sure that their pupils are equipped to meet this challenge. They will continue to be driven to teach to higher standards and to be accountable to the government and to the public. The question then remains as to how the teaching profession can reclaim professionalism, whilst accepting that government and external constraints will need to be addressed. Much government

intervention which impacts on teachers' professionalism is concerned with curriculum matter, gaining levels of achievement and increasing the accountability of the teacher. It is about making judgements on effectiveness and is known as *Techne* (Biesta, 2009, p. 187). However, *Phronesis* is not a skill or competence but is 'more akin to a way of being'. It is 'a reasoned and true state of capacity to act with regard to human goods' (Aristotle, 1980, p. 143). It is not concerned with the application of rules, but about seeing, understanding or knowing what needs to be done. It is about exercising practical judgement, which in turn leads to practical wisdom and about engaging with situations and seeing them from the perspective of educational ideals and values (Biesta, 2009, p. 188). *Phronesis*, by its very nature is difficult to measure and difficult to set standards for and because it is so difficult to pin down, it remains an area where teachers can retain some level of autonomy. Teachers who can exercise good professional judgement and show professional wisdom are more likely to uphold public trust, a requirement of Teachers' Standards in England.

### **Professional Standards, Professionalism and Public Trust**

O'Neill states that trust is a valuable social capital, hard earned easily dissipated and involves risk (2002). She firmly states her belief that the assumption that accountability is an alternative to relations of trust is mistaken (2013, p. 9). Groundwater-Smith and Sachs consider trust to be a quality which shows confidence in the behaviour of another and an expectation that they will behave in honest and honourable ways. It is an essential human resource, often taken for granted but nonetheless an important part of relationships whether at the personal or institutional level (2002, pp. 342-343). Bottery states that trust is two way. It needs to be gained by being earned (2003, p. 260). Trust can be breached when there is uncertainty and the 'professional landscape' is unstable. When this occurs, both trust itself and the relationships based on trust are damaged.

In order to minimise the risk involved in trust, greater accountability has been imposed, with its required conformity. However, O'Neil considers that trust is based on social habits rather than evidence. Furthermore she states that 'low trust societies can do no better than replace trust with accountability' (2013, p. 9). Day's research found that many teachers considered imposed reforms, including those relating to accountability to be undermining their professionalism (2002). Respondents in his research considered that a sense of being valued, making a difference in children's lives and having a sense of agency were elements of being an effective teacher. It would seem that to them, professionalism is less about adherence to rules and being accountable and more about building relationships of mutual trust and respect.

Similarly, Tichenor and Tichenor (2005) found that teachers defined professionalism by identifying virtues or characteristics such as being resilient, keeping composure, being caring, nurturing, friendly, patient, well-organised, having good morals, going above and beyond to do the job, being open to new ideas and receptive to suggestions. Additionally they were seen as being risk takers, having positive attitudes, respect for children and being dedicated to their students. Outside the classroom, professionalism was defined as being effective communicators with parents and colleagues, being a good role model, showing respect for colleagues and parents and engaging in collaborative work. These virtues or characteristics are expressed through professional relationships, through building partnership and taking enough risk to dare to trust. Being accountable, responsible, to another, is implicit in a relationship of trust. Having to impose accountability seems to be a recognition that trust is no longer reliable, therefore it would seem that the very tool designed to bring about more transparency and thereby engender trust in the teaching profession, has been the tool which has undermined trust and created suspicion. Yet, O'Neill maintains that 'the claim that trust is obsolete in social and professional life, hence to be

rejected in favour of accountability, could not, however, be further from the truth' (2013, p. 10). She contends that the increased forms of accountability imposed on the teaching profession 'only pushes the question of where to place and where to refuse trust further back' (*Ibid*, p. 10). She recommends 'intelligent accountability'. Such accountability would place less emphasis in performance indicators as many of the things which are important for education cannot be counted, added, or ranked because there is no genuine unit of account' (*Ibid*, p. 14). In this way, perverse incentives can be minimised and the teacher can be freed from the shackles of performativity, leading to greater scope for professional judgement and relationship building and in turn to the reinstatement of trust.

Professor David Hall in his Foreword to the *Good medical practice in paediatrics and child health* states:

*Professionalism comes from within ourselves, from our working relationships with our peers and we hope from our organisation. It cannot be imposed, but it can be and is being eroded by outside forces such as unjustified media attacks.....and the imposition of tight controls.....The fundamental element of good medical practice has always been, and will always be, absolute commitment to the good of one's patients and all times – without this we are no longer professionals.....*(Royal College of Paediatrics and Child Health, 2002)

While this is clearly a statement concerned with the professionalism of medical practitioners, it nevertheless indicates that professionalism includes a 'way of being', and can be developed through relationships with peers. Just as the fundamental element of good medical practice is the commitment to the patient, so the fundamental element of the practice of good teaching will always be the child. Pring considers that teaching is concerned with the moral enterprise of helping pupils to see the world in a more worthwhile way 'or experiencing it, or relating to

others in a more human and understanding way' (2001, p. 106). Similarly Goodson (2000, p. 187) suggests that teaching is a moral and ethical vocation driven by a belief in social and moral purpose. All this seems a far cry from the tick box Standards which are being externally imposed and the gulf between perceptions of professionalism from the government's view point and that of the teacher's is evident.

Sachs (2003) considers that the use of Standards on top of the teachers' already heavy workload will make teaching even more demanding (p. 51). Certainly, if the teacher sees their professionalism in terms of building trusting relationships, then a further layer of bureaucracy which introduces strong accountability and adherence to externally imposed Standards will add complexity and competing values. However, it is in the building of relationships of trust that teachers can be given freedom to act, to exercise their professional judgement and to develop professional wisdom. Trust will allow teachers to work collaboratively, to assess, monitor and develop their own learning and to be ready to accept change. Such collaboration requires teachers to be open to others to be 'real' (Mockler, 2005, p. 742). It is in the reconciliation of different perceptions of professionalism that teachers are able to show themselves to be the most professional. They need to be seen to be acting professionally as well as expect to be treated as professionals. Baggin (2005, p. 7) considers that the way teachers respond to imposed standards demonstrates the extent to which they may be professional. Having to carry out imposed goals and outcomes, even though they may be at odds with personal and professional beliefs and ideals is demanding and requires teacherly wisdom. The level of professionalism required in this circumstance is greater than that required for meeting Teachers Standards alone.

## **Conclusion**



This paper has sought to outline the nature of professionalism in England and how this is being influenced by externally imposed Teachers' Standards. It considers how the terms professional and professionalism have shifted over time and are subject to differing interpretations. In particular, it outlines how the government in England appears to perceive teacher professionalism more in terms of attaining standards, being accountable and delivering the curriculum, whereas teachers see professionalism more in terms of building relationships, making judgements and developing professional wisdom. The effect of continual scrutiny through imposed accountability is outlined, in particular how trust which it is designed to bolster, is being eroded. Teachers feel the pressure to divert their energies into perverse incentives, which diminish trust and skew priorities and make them feel disempowered. While it is recognised that Teachers' Standards are likely to be here to stay, this paper suggests that it is how teachers respond to the challenges of holding on to their own professional beliefs and values, while responding to imposed standards and required goals which demands the highest professionalism of all.

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# **School-based approaches to pre-service primary Science teacher education resulting in gains in confidence**

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## **Abstract**

The quality of science education has been the focus of a number of research projects nationally and internationally, including concerns about primary teachers' lack of science knowledge and confidence to teach science. In addition, the effectiveness of traditional approaches to teacher education have been questioned. The Science Teacher Partnerships with Schools (STEPS) responds to these concerns by investigating the effectiveness of school-based approaches to pre-service primary science teacher education. It considers established, innovative and successful practices at five universities to develop and promote a framework supporting school-based approaches to pre-service teacher education. An analysis of the five models was conducted in 2013 involving interviews with teacher educators, pre-service teachers, and school principals and teachers. Pre-service teachers at these universities also engaged in pre- and post-online surveys generating data on their expectations and experiences associated with these experiences. This paper reports on the analysis of the survey data, which shows that there are statistically significant gains in pre-service teachers' responses to several items relating to their confidence to teach science. Analysis of the data also shows interesting differences between universities noted in different confidence items. The school based experience was shown to provide these pre-service teachers with an authentic engagement with the teaching of science while being supported by their university tutors. While raising confidence at university does not automatically translate to confident early career teachers, the gains in confidence are an important step in assisting prospective teachers to approach the teaching of science more positively than they might otherwise. Implications for teacher education and the role that university-school partnerships can play in preparing confident teachers of science will be discussed.

## Introduction

Skills shortages in science-based areas are a growing concern nationally (Commonwealth of Australia, 2011). Since the development of children's understandings is fundamentally tied to the quality of teaching (Darling-Hammond, 2000; DEST, 2003) it is particularly concerning that primary teachers lack science knowledge and confidence to teach science (Jones & Carter, 2007). Consequently, time spent on teaching science in primary years is limited (Goodrum, Rennie & Hackling, 2001), leading to pre-service teachers' lack of exposure to science teaching when on practicum.

The Science Teacher Partnerships with Schools (STEPS) Project (<http://www.stepsproject.org.au>) responds to these concerns by investigating the effectiveness of school-based approaches to pre-service primary science teacher education. It considers established, innovative and successful practices at five universities, to develop and promote a framework supporting school-based approaches to pre-service teacher education. This project was funded by The Office for Learning and Teaching<sup>1</sup> to develop and promote a framework supporting the development of such partnerships. An analysis of the five models was conducted in 2013 involving interviews with teacher educators, pre-service teachers, and principals and teachers from partnership schools. Pre-service teachers at these universities also engaged in pre- and post-online surveys generating data on their expectations and experiences associated with these experiences.

In this paper we report on the analysis of pre-service teachers' responses to the pre- and post-online surveys from four of the universities involved in the project. The focus of this paper is an

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<sup>1</sup> Project ID12-2412, Project name "School-based pedagogies and partnerships in primary science teacher education" (Funded 2013 - 2104)

investigation of any changes in confidence to teaching primary science (see Figure 1). It begins with an overview of the previous research which has informed the project, followed by details of the data collection and analysis. Both quantitative and qualitative results are reported to shed light on the effect of the implementation of these school-based science education programs. Analysis of the quantitative data reveals statistically significant gains in pre-service teachers' confidence to engage in a number of activities related to teaching science. The qualitative data shows shifts in pre-service teachers' expectations of the program to actual gains reported at the completion of the program. Some tentative differences emerged between the results for the different universities.

## **Background**

The project responds to national and international literature highlighting directions and areas of concern in teacher education generally and science education in particular. The effectiveness of traditional approaches to teacher education have been questioned and criticised for lacking appropriate links between theory and practice (Darling-Hammond, 2005; Jones & Ryan, 2014). Australian Academy of Deans of Education (ACDE) (2004) submission to the Victorian parliamentary inquiry into teacher education argued for “an embedded and central positioning of professional practice in teacher education in ways that relate ...professional experience to theoretical insight. The relationship between theory and practice needs to be seen as mutually informing” (p. 3) and they call for research into new pedagogies that promote such practice. The school-based experience of science education reported in this paper responds to this call. However, the role of the university lecturer is crucial in supporting pre-service teachers (Howitt, 2007), especially for providing pedagogical content knowledge to teach science (Kenny, 2010).

Since the development of children's understandings is fundamentally tied to the quality of teaching (Darling-Hammond, 2000; DEST, 2003) and reflection on teaching experiences develops teaching knowledge and ability (Loughran, 2010), school-based experiences, where pre-service teachers plan and implement science lessons with primary school children, have the potential to allow them to develop appropriate content knowledge and teaching strategies. Perhaps overcoming the reported pre-service teachers' lack of confidence in their knowledge and ability to teach science (Palmer, 2006; Jones, 2010; Kenny, 2010; Gess-Newsome & Lederman, 2001) and even sustaining their confidence into schools at the completion of their course. Gess-Newsome and Lederman (2001) stated that many primary teacher education graduates lack confidence and competence in teaching science. While raising confidence at university does not automatically translate to confident early career teachers, the gains in confidence are an important step in assisting teachers to approach the teaching of science more positively than they might otherwise. In primary years science is approached in a disconnected fashion or not at all (Keys, 2005; Tytler, Osbourne, Williams, Tytler, & Cripps Clark, 2008) and primary teachers' lack confidence to teach science (Jones & Carter, 2007), so pre-service teachers may not have the opportunity to observe the teaching of science on practicum.

## **Method**

The STEPS Project team consists of academics from five universities (Deakin, University of Melbourne, RMIT University, University of Tasmania and ACU) engaged in school-based approaches to science education. Each university has independently developed a university-school partnership model to provide opportunities for pre-service teachers enrolled in the primary science education unit or elective unit to engage in the teaching of science in primary schools. Each model has a history of successful implementation and evaluation. These models



have been locally developed to respond to the perceived needs of particular groups of pre-service teachers. They are grounded in particular contexts, and reflect the teacher educators' knowledge and beliefs about science teaching and learning. All models display a common commitment to providing an authentic experience where pre-service teachers plan, implement and reflect on a series of science lessons with primary school children in schools. The models demonstrate diversity in the interaction between the pre-service teachers and school children, ranging from working with small groups or whole class; reflective practices, ranging from teaching team reflection to individual teachers, with the reflective focus on individual students, small groups or whole class analysis; how theory informs the approach and positions the students; assessment focus and purposes; and the nature of the partnership and the degree to which teacher professional development is incorporated into the partnership.

At four of the five universities, data was collected in 2013 from interviews with teacher educators, pre-service teachers, and school principals and teachers to analyse the five models as a cross-case analysis. This data collection excluded University of Tasmania because the elective unit in which the program was implemented has not been offered since 2012; data however was collected in previous years. Pre-service teachers at the four universities also engaged in pre- and post-online surveys generating data on their expectations and experiences associated with these school-based models. This paper reports on the analysis of these online surveys. Figure 1 shows a comparison and alignment of the questions in the surveys. Figures 2 and 3 show sections of the survey, which asked pre-service teachers to indicate their degree of confidence in a number of elements of teaching of science using a 5-point Likert scale.

Pre-test only	
Level of science in secondary school	
Specify discipline (Phya, Chem, Biol)	
Tertiary study of science?	
Seen science taught on placement?	
Have you taught science on rounds?	
What do you hope to gain from this unit?	
Common Qs	
Unique Identifier	
Gender, Age, PT/FT, Course name, Institution,	
When you are a teacher, how much science do you expect to teach?	
How important is science in primary school curriculum?	
How confident are you to teach science?	
To what extent does your commitment to your students motivate your practice in Science teaching?	
To what extent does your interest in science motivate you to teach science	
Post-test only	
What did you gain from this unit?	
Which aspects of the school experience were most valuable?	
What types of supports made the experience successful?	
What other types of supports would have been helpful?	
To what extent do you think school-based experiences are important within discipline curriculum units (e.g. science, maths, literacy, etc)?	
Has the way you see yourself as a teacher changed as a result of the school based experience? Please explain	
To what extent you feel that you had an impact on students' learning? Explain	
To what extent do you feel you have had an impact on students' attitudes towards science? Evidence for this?	
To what extent has your approach to science teaching changed?	
Would you be willing to participate in a focus group interview with a researcher in July-August to discuss your experiences in this unit?	

Figure 1. Comparison of the make-up of the pre and post surveys

On a scale of 1 to 10 rate yourself against the following (1= not at all, 10 = totally):

	0	1	2	3	4	5	6	7	8	9	10
How important is science in primary school curriculum?											
How confident are you to teach science?											

Figure 2. Questions from online survey asking about teaching science

How confident do you feel about doing the following?					
	Very under confident	Under confident	Neither under confident nor confident	Confident	Very confident
Learning science content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Undertaking and supervise experiments with children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planning science lessons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating an engaging classroom environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Managing the behaviour of a group of children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Undertaking critical reflection on my science teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establishing and building on students' science understandings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being excited about the science I am teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 3. Excerpts from online survey relating to confidence

In addition, in the pre-survey participants were asked what they hoped to gain from the unit and this was matched with a question in the post-survey which asked what they had gained from the school-based experience.

Unfortunately not all pre-service teachers completed both surveys. Table 1 shows the average number of pre-service teachers at each university and the percentages of their cohorts who completed either survey. A total of 105 pre-service teachers completed the pre-survey and 101 completed the post survey, and only 30 completed both surveys.

Table 1. Percentage responses to the surveys by pre-service teachers from each university

Site	Deakin	RMIT University	University of Melbourne	UTAS	ACU Ballarat
Course	B.Edu (Prim)	B.Edu BEdu/Disab M. Teaching	B.Edu M. Edu	B.Edu	B.Edu (Prim) B. Early Childhood and Primary Education
Av. N/yr	450	280	165	24	72
% pre-test	32	20	30	NA	18
% post-test	39	43	6	NA	12

A 5-point Likert scale was used with 'very underconfident' = 1; and 'very confident' = 5 to enable calculation of statistical measures. Paired t-tests undertaken on the results for the 30 participants who complete both the pre and post surveys, with pairing established by matching identification codes. The level of significance used was 0.05, so that any t-test resulting in a p-value of less than 0.05 could be considered statistically significant. In addition, Cohen's D effect sizes (Cohen, 1998) were calculated to gauge the degree of effectiveness of the school-based experience. Cohen (1988) categorised effect sizes as "small,  $d = .2$ ," "medium,  $d = .5$ ," and "large,  $d = .8$ " (p. 25).

## **Results**

The results will be presented in two sections, firstly the results of paired t-tests using paired data from a pre-survey and a post-survey are presented, including analysis of the pre and post short answer items. This is followed by the results from the total (paired and unpaired) data responses.

### *Paired data*

This section reports on the 30 pre-service teachers who completed the survey before and after their school-based experience in science education. Pairing was established through the matching of identification codes provided by the 30 pre-service teachers in both surveys. In this group of pre-service teachers 13% were male and 94% were aged 30 or under. Table 1 shows the distributions for gender, university and ages.

Table 1. Distribution of pre-service teachers who completed both surveys

Gender	Percent	University	Percent	Age	Percent
male	13%	ACU	27%	18-20	17%
female	87%	Deakin	30%	21-25	47%
		RMIT	30%	26-30	20%
		Melbourne	13%	31-35	0%
				36-40	7%
				41-45	7%
				46+	3%

Participants were asked to rate, on a ten-point scale, how confident they felt about teaching science before and after the unit. There was significant improvement in pre-service teachers' confidence in teaching science as demonstrated by a paired t-test ( $p = 0.000085$ , see Table 2). They were also asked to rate, on a five point scale, their confidence to do a number of other aspects related to teaching science. Table 2 shows the mean rating score and standard deviation for each survey for each of the confidence items listed in the first column. Also shown on this table are the results of paired t-tests conducted for each aspect.

It should be noted that pre-service teachers' confidence for these items was already quite high when completing the pre-survey. However, there were significant improvements in a number of the confidence items (see Table 2): undertaking and supervising experiments with children ( $p = 0.00009$ ); planning science lessons ( $p = 0.0000008$ ); creating an engaging classroom environment ( $p = 0.00001$ ); managing the behaviour of a group of children ( $p = 0.001$ ); undertake critical reflection on their own science teaching ( $p = 0.04$ ); and establish and build on children's science understandings ( $p = 0.004$ ). The means for each of these items before the unit

were at or above 3.4 and increased to 4 or above. This suggests that these pre-service teachers began the unit with a high level of confidence but showed statistically significant gains in confidence by the end of the school-based experience. These areas of gain provide some indication of areas that the school-based experiences attended to: planning through to implementation, creating engaging learning environments where behaviour must be managed, and experience with assessing and building on students' prior experiences through the use of scientific teaching strategies, such as experiments.

Other items showed no significant difference in, including learning science content ( $p=0.06$ ) and being excited about the science they taught ( $p = 0.18$ ).

Table 2. Changes in (paired) pre-service teachers' confidence

Confidence to:	Mean		Standard Deviation		p-value
	Pre	Post	Pre	Post	
Learn science content	3.9	4.2	0.83	0.71	0.06
Undertake & supervise experiments	3.87	4.4	0.82	0.62	0.00009*
Plan science lessons	3.4	4.4	0.89	0.50	0.000008*
Create engaging classroom environment	3.4	4.4	0.89	0.67	0.00001*
Manage behaviour of a group of children	3.8	4.3	0.66	0.52	0.001*
Undertake critical reflection on their own science teaching	3.9	4.28	0.92	0.65	0.04*
Establish & build on children's science understandings	3.43	4	0.85	0.74	0.004*
Be excited about the science they taught	4.1	4.2	4.2	0.89	0.18
Teach science (10 pt scale)	6	7.68	2.07	1.46	0.00009*

The effect size for these items can be seen in Table 3. The effect size has been included to support and complement the p-value resulting from the paired t-test. The value of the effect size indicates there is a large gain in confidence to: Plan science lessons; create an engaging classroom environment; manage behaviour of a group of children; and teach science.



Table 3. Effect size

Confidence to:	Effect size
Undertake & supervise experiments	0.74
Plan science lessons	1.44
Create engaging classroom environment	0.80
Manage behaviour of a group of children	0.79
Undertake critical reflection on their own science teaching	0.48
Establish & build on children's science understandings	0.71
Teach science (10 pt scale)	0.95

Qualitative data: Expected and actual gains

The pre- and post-tests used short answer items to gain the ‘expected gains’ and ‘actual gains’ as expectations and perceptions of the students. The questions were *Pre-survey*: What do you expect to gain from this science? *Post survey*: What did you gain from this science unit?

A thematic analysis identified various themes in the post data, one of which was the emergence of elements that had not appeared or were less frequent in the pre data. The pre data tended to focus on the following elements: experience, content knowledge, activities and teaching strategies, confidence, planning, implementation, as well as some focus on student engagement and understanding. ‘Experience’ was the most commonly used term, not surprisingly given that most students would not have experienced teaching science prior to the unit. The following quote

has the themes experience, student engagement and challenge, content knowledge, confidence, and curriculum:

*Experience in teaching engaging and challenging science lessons in a primary school setting. / Sound understanding and knowledge of science concepts. / Confidence teaching science and understanding of how science relates to AusVELs and the curriculum.*

Some of the post reflections were simply an expression of meeting the expected gains. However, in addition, new to the post reflections were a range of ideas that can only emerge through experience of teaching science in authentic settings, where science teaching in the context of the school is allowed for and enabled. The follow outlines the key ideas as a list composed from across the 30 responses and not reflected necessarily in more than one response:

1. Reality of teaching: where there was expression of the enormity and complexity of the task of teaching a sequence, or in using the strategies and approaches they are being taught by their university tutor to use; and an understanding of the value and positioning of science in schools and that it should be valued, but often is not.
2. Knowledge of learners: reflecting the children's responses to the science experience; and the need to build ideas over time.
3. Teacher identity: an increased efficacy as a teacher of children and/or science
4. Teacher reflection: the importance of ongoing reflection for lesson and unit implementation, and understanding learners; that reflection is needed for improvement in teaching knowledge and practice; and that reflection is a mechanism for change.

We have isolated four student pre and post responses as shifts in emphasis of their thinking. The above four ideas are evident within them:

1. Shifting from... How to integrate to Learning through practice:

**PRE:** *How to integrate science into an already **crowded** curriculum*

**POST:** *Putting into practice the lesson plans that you devise is an **effective way of learning**. You can **reflect** on your own teaching and make notes of what worked and what didn't for future.*

2. Shifting from ... Themselves to The children they teach:

**PRE:** *Experience and building confidence in teaching science concepts*

**POST:** *Improving my perspective of the **abilities and interests of specific year levels**.  
Observing the **realities** of inquiry learning.*

3. Shifting from... Science content and teaching it to Bridging theory and practice:

**PRE:** *I hope to be able to understand how to teach science effectively and see what needs to be undertaken before teaching a science unit - particularly if I **don't understand it properly***

**POST:** *Confidence. Actual experience to go with **theory and knowledge** I have learnt.*

4. Shifting from ... Philosophical about learning to Complexity of teaching science:

**PRE:** *Instilling a **life long love** for science in my students*

**POST:** *An understanding of **all the elements** that need to be considered when undergoing hands-on experiments with students- appropriate planning, explicit instructions that are constantly re-iterated, ensuring care and safety, demonstrating how to use any equipment, explaining how to predict and record, and **keeping track of everything!***

### *Unpaired data*

Many pre-service teachers only completed one of the surveys: 105 completed the pre-survey; and 101 completed the post-survey. Table 4 shows the distributions for gender, university and ages for each survey. These results show there is little difference between the distributions of the participants completing the surveys with respect to gender and age, however RMIT and Melbourne participation rates are quite different. Nevertheless comparisons across institutions show interesting patterns in responses to these confidence questions (see Table 5) which shows the pre & post means and p-value for each item for each university with significant p-values highlighted.

Table 4. Distribution of pre-service teachers who completed the surveys

<b>Gender</b>	<b>Pre</b>	<b>Post</b>	<b>Uni</b>	<b>Pre</b>	<b>Post</b>	<b>Age</b>	<b>Pre</b>	<b>Post</b>
male	11%	8%	ACU	18%	12%	18-20	13%	14%
female	89%	92%	Deakin	32%	39%	21-25	48%	59%
			RMIT	20%	43%	26-30	19%	12%
			Melbourne	30%	6%	31-35	5%	2%
						36-40	4%	5%
						41-45	6%	4%
						46+	6%	4%

Table 5. Changes in pre-service teachers' confidence by university (significant p-values indicated \*)

Confidence to	ACU		Deakin		RMIT		Melbourne	
Learn science content	0.07*	3.9 4.4	0.007*	3.6 4.1	0.1	3.8 4	0.02*	3.8 4.4
Undertake & supervise experiments	0.2	4 4.3	0.008*	3.9 4.3	0.0000 8*	3.7 4.3	0.01*	3.9 4.4
Plan science lessons	0.002 *	3.4 4.3	0.004*	3.5 4	0.0000 02*	3.4 4.3	0.1	3.6 4
Create engaging classroom environment	0.09	4 4.5	0.3	4.1 4.2	0.002*	3.9 4.4	0.5	4.1 4.1
Manage behaviour of a group of children	0.3	4.1 4.3	0.05	3.9 4.2	0.05	3.7 4	0.4	4 3.9
Undertake critical reflection on their own science teaching	0.3	3.8 4.1	0.1	3.8 4	0.06*	4 4.3	0.2	4 4.3
Establish & build on children's science understandings	0.04*	3.5 4	0.01*	3.4 3.9	0.003*	3.5 4	0.2	3.6 3.8
Be excited about the science they taught	0.3	4.1 4.3	0.5	4 4	0.02*	4.2 4.5	0.5	4.3 4.3
Teach science (10 point scale)	0.02*	6.6 8.1	0.2	7 7.2	0.0007 *	5.9 7.7	0.2	7 7.3

Whilst the differences in distribution of responses for the pre and post surveys from the different universities are somewhat problematic and no clear conclusion can be made on the basis of this data, this breakdown of the confidence items by university gives some indications that the responses to different items varied according to university. This may be due to the different approaches to the implementation of the school-based experience taken by each university.

In summary, the key findings of this study were the significant confidence gains in the paired data for: Undertake & supervise experiments; Plan science lessons; Create engaging classroom environment; Manage behaviour of a group of children; Undertake critical reflection on their own science teaching; Establish & build on children's science understandings; and Teach science. Key aspects revealed in the qualitative data relating to expected and actual gains were: Learning through practice; importance of the children they teach; bridging theory and practice; and complexity of teaching science. In addition interesting variation was noted in the responses from pre-service teachers from different universities.

## **Discussion**

The effect size of 1.44 (Table 3) for increased confidence to plan science lessons shows a substantial gain. The increase in confidence to “teach science” might be expected within a practice-based unit, but would only be expected where practice of planning, implementation were major components of a unit. This raises the question as to whether a university-only unit would lead to such confidence gains, although we have no data to make definitive claims as to the effect of the school-based experience against a control that is solely university-based. There is much value in implementing and critiquing the effectiveness of a lesson plan. Many science education units require students to plan units and tutors can give substantial feedback on clarity, potential effectiveness, and applicability, but it is through planning, implementation with

children and reflection of a set of lesson plans that pre-service teachers can increase in confidence and competence over time and practice.

This process can be equated to the action research process (Carr & Kemmis, 1986) where there is active learning through a series of iterative plan, implement, observe and reflect processes. Each model in the STEPS project explicitly focused on these processes, although may not necessarily refer to the learning activities as action research. The previous NSW Department of Education and Training (DET) promoted Action Research as important for teachers because it enables immediate and insightful reflection on practice and is manageable within school environments.

Confidence in undertaking and supervising experiments also returned a moderately high effect size ( $d=0.74$ , Table 3). This is an important confidence gain because experiment work can often seem daunting to a teacher due to the organisational requirements and the potential for a disrupted classroom.

Establishing and building on children's science understandings ( $d=0.71$ , Table 3) is a strong focus within the universities' models for school-based science education, stemming from a constructivist background to science education. Perhaps this gain in confidence is a product of the experience involving authentic interaction with children. Diagnostic assessment and elicitation techniques are needed as a first step in appreciating a conceptual focus to science learning experiences for children in primary schools. Often the focus of science in the primary classroom is on activity, engagement without commitment to conceptual development (Tytler, 2007), so it is encouraging to see commitment to conceptual ideas in the qualitative data.

## **Conclusion**



The school-based experience was shown to provide these pre-service teachers with an authentic engagement with the teaching of science whilst being supported by their university tutors. It is clear that for science education units to be effective at improving the capacity of graduate teachers to promote and implement quality science education, there is a need to increase the confidence of graduating teachers. The school-based approach used by the models represented in the STEPS Project appears to increase their confidence. Research by Kenny (2001) has shown that pre-service teachers who undertake these types of programs are likely to maintain these levels of confidence when they enter teaching. However there is need for follow up studies to show what conditions are required for any confidence gains to be sustained and impact on teachers' commitment and ability to teach once in schools.

These results provide some evidence that effective science teacher education can be achieved when embedded within a partnership between university and schools and there is a commitment to quality science education. Such partnerships and commitments provide a 'third space' for authentic interaction with children in schools for the purpose of bridging the theory-practice divide. Where this interaction between pre-service teachers and children is integral to a science-related unit, experience of planning, implementing and assessment of a learning sequence in science can enable reflection on and articulation of practice that focuses on pre-service teacher development efficacy and identity, and children's learning.

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## **Mentor feedback: Models, viewpoints and strategies**

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### **Abstract**

A mentor's feedback can present professional insights to allow a mentee to reflect and develop practice. This paper positions two models for feedback that have emanated from empirical studies. It also demonstrates the diverse viewpoints of mentors and suggests strategies for providing quality feedback. In one qualitative study, 24 mentors observed a final-year preservice teacher through a professionally video-recorded lesson and wrote their observations towards giving feedback to the potential mentee. Tables illustrated in the paper, show that mentors' positive feedback and constructive criticisms vary considerably on the same observed events. Data from this study were synthesised to posit a theoretical model for analysing mentor feedback in an interconnected, three-way Venn diagram, namely: visual, auditory and conceptual frames. Another study ( $n=28$ ), which is a collection of mentor teachers' work samples during the Mentoring for Effective Teaching (MET) program, provides strategies within six feedback practices, that is: (1) negotiated mentor-mentee expectations for providing feedback on practices, (2) reviewing teaching plans, (3) arranging for observations of practices, (4) providing oral feedback, (5) providing written feedback, and (6) presenting opportunities for the mentee to evaluate teaching practices with consideration of the mentor's feedback. For example, on the last mentioned practice (6) there were strategies such as "Plan a time for evaluation of practices (guided reflection)", "Read the mentee's reflection on practice and discuss how it aligns with your observations of their practices", and "Highlight verbally and/or in writing where the mentee is perceptive about the reflection and how the reflection could be enhanced for future evaluations". Developing a range of strategies that may assist the mentee in professional growth, include enlisting a community of mentors, ensuring mentors have a repertoire of strategies for articulating feedback, and using mentor feedback tools and models. This study has implications for the development of feedback models and strategies.

**Keywords:** mentoring; teaching strategies; teaching approaches

## **Introduction**

Mentors are paramount for guiding mentees' teaching practices. Through observation, mentors can provide quality feedback on positive aspects of their mentees' development and areas that require further improvement. Indeed, a mentor teacher draws conclusions about a mentee's teaching towards providing feedback predominantly through observations of practice, particularly observing a mentee teach in the classroom. This paper presents two models associated with providing feedback, namely: (1) a model of feedback across six feedback practices, and (2) the dimensions of mentors' observations for feedback.

## **Literature Review**

There are many aspects of a mentee's teaching practices that a mentor could observe. For example, observations around pedagogical knowledge practices (e.g., Hudson, 2013a) may allow for informative feedback. Mentors could observe how the early-career teacher engages and motivates students into learning about a topic (e.g., Broek & Kendeou, 2008). All facets of an early-career teacher's practice may come under scrutiny, such as enthusiasm for teaching (Tauber & Mester, 2006), positive attitude for teaching (Ediger, 2002; Wong, Britton, & Ganser, 2005), or establishing clear and coherent goals that can orientate students' inquiry (Seidel & Prenzel, 2004). Whatever early-career teachers do in the classroom can be within the mentor's observational scope.

The feedback from mentors can allow mentees to synthesise and evaluate themselves towards developing a professional identity. For instance, one study (Harrison, Lawson, & Wortley, 2005) explains how the mentor's questioning of a mentee enhances reflective thinking for developing pedagogical practices. Another study (Sempowicz & Hudson, 2011) shows how mentors'

feedback can translate into advancing mentees' pedagogical practices. Wiggins (2012) outlines that "helpful feedback is goal-referenced; tangible and transparent; actionable; user-friendly (specific and personalized); timely; ongoing; and consistent" (p. 13). He continues on to say that feedback needs to be "stable, accurate and trustworthy" (p. 13). Importantly, feedback must be aimed at advancing practices and, for early-career teachers in particular, lead towards developing a teacher identity consistent with system expectations.

## **Theoretical Frameworks**

### *Self identity and mentor feedback*

In the occupation of teaching, as in other occupations, self awareness appears to be pivotal in forging a self-identity (Duval & Wicklund, 1973). In self-identity theory, Carver and Scheier (1981) outline two types self-awareness, that is: the private self and the public self. Teaching is very much a public occupation, particularly as teachers engage with a wide range of people (students, staff and the wider community). This infers that teachers forge identities through symbolic interactionism arising from social interactions (e.g., Cooper & Olson, 1996), which Vygotsky (2012) also coins as social constructivism. Festinger's (1954) social comparison theory posits self identity around comparing oneself with others while self-categorisation theory (see Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) is the process of feeling like a member of a group. Teachers with a strong sense of self identity compare themselves to other teachers and generally want to feel like they are part of the profession. Indeed, developing an identity requires a social setting, building self esteem and recognition of oneself in an environment (Ashforth & Mael, 1989). In forging a self identity, viewing oneself without understandings from others may be fraught with considerable subjectivity and bias; hence feedback is intended to facilitate

reflective thinking for professional growth (Schön, 1987) and promoting a professional self identity.

Early-career teachers (preservice teachers and beginning teachers) are new or relatively new to the profession and their self awareness and development of a self identity as teachers will be in formative stages. The feedback provided by effective mentors can allow the early-career teacher to reflect on practices for professional growth, thus contributing to a professional self identity. Mentor feedback frameworks or models tend to be around success criteria provided by universities, which usually involves checking boxes and/or writing comments. These processes are valuable for determining a mentee's level of achievement. Nevertheless, mentors report that their feedback to mentees is variable (Hudson, 2010). Hence, mentors also need to consider how they observe teaching practices and how they can provide feedback to their mentees. The research question for this study was: How can mentors observe and provide feedback to mentees? More specifically, what strategies can mentors employ to provide feedback and what framework may be used to determine *how* mentors provide feedback?

### **Research Design and Findings: Case Study One**

This qualitative study is divided into two case studies (Denzin & Lincoln, 2011), each focused on a mentor-mentee feedback model. The first study focuses on a factor (Feedback) from a mentoring (Hudson, 2004) emanating from the literature and empirical evidence, and will be explored in terms of the types of strategies mentors advocate within this conceptual framework. It should be noted that “mentoring preservice teachers” (and other associated terms such as mentor, mentor teacher, mentee) can be viewed differently from supervising preservice teachers or supervising student teachers. For instance, “mentor teacher” is used in this paper instead of supervising teacher, as the term mentor teacher provides an identity that aims to facilitate a role

around mentoring rather than supervision alone. The selection of mentoring terms aims to reduce confusion in role delineation and simultaneously enhance role expectations. Supervision and coaching may be viewed as a one-way process with the supervisor or coach in a more powerful role, while the mentoring role can be considered as a two-way learning and sharing process; it can be considered as more holistic and nurturing to encompass the mentor's personal attributes, mentoring system requirements, articulating pedagogical knowledge, modelling of teaching practices, and providing feedback to the mentee. The second case study focuses on a *mentor observation model* (Hudson, 2014) as a subset of one practice within the first model (observe) and will analyse what and how mentors observe for providing feedback.

The “Feedback” factor as a model presents six mentoring practices, that is: negotiating expectations, reviewing teaching plans, observations of teaching practices, providing oral feedback, providing written feedback, and feedback around the mentee's evaluation of teaching practices. Negotiating expectations around the feedback is essential before providing feedback. Both the mentor and mentee need to have a clear understanding of the proposed feedback parameters (e.g., feedback around pedagogical practices). There should be opportunities for the mentee to seek advice about the teaching plans, as this provides a way for advancing the teaching plans prior to teaching. As a scientific tool, observation of practice will allow the mentor to focus directly on the mentee's teaching. Oral feedback can be delivered more timely and fluently after an observation (Bunton, Stimpson, & Lopez-Real, 2002; Sempowicz & Hudson, 2011), while written feedback formalises the process as a type of contractual arrangement for advancing teaching practices (Lock, Soares, & Foster, 2009). Importantly, mentees need to reflect on the teaching practices, which can be provided to the mentor in the form of a written evaluation (Korthagen, 1993; Valencic & Vogrinc, 2007). This may also help to determine what early-



career teachers learn from their mentors; although researchers (Rajuan, Beijaard, & Verloop, 2008) claim that learning from the mentor “remains an unanswered question” (p. 131). Nevertheless, understanding how mentors provide feedback and what they observe in a mentee may present insights into feedback parameters.

The *mentor observation model* focuses on how and what mentors observe during a teaching episode. The model posits that mentor observations occur within three theoretical dimensions, namely: (1) visual, (2) auditory, and (3) conceptual. These dimensions can be represented by a Venn diagram, as various observations have the potential to overlap across the dimensions. The purpose of this paper is to outline feedback strategies and present ways in which a mentor observes towards providing feedback.

Case study one gathered data during a one-hour session within a two-day Mentoring for Effective Teaching (MET) program (see [www.tedd.net.au](http://www.tedd.net.au)). Mentor teachers' ( $n=28$ ) strategised on the six aforementioned feedback practices and wrote their responses as they discussed strategies in small groups of four to six participants. These strategies will be presented within the following six feedback practices:

#### *Establishing expectations*

Mentor teachers were asked about strategies that may assist with establishing expectations for feedback on the mentee's practices. Mentors were clear that expectations needed to be focused on all aspects of teaching practices that matched the expected teaching level of the mentee. To illustrate one mentor wrote: “*Outline your expectations for the mentee's lesson planning, teaching, assessment, and reflection*”, which another mentor elaborated “*needs to be relevant to the mentee's developmental level*”. However, ensuring that expectations are commonly held was highlighted as the most important strategy. That is, it was argued that the mentor and mentee

need to share their expectations about what they want as a process for providing feedback with common agreement on procedures and feedback practices, also articulated as process of negotiation, for example: “*Negotiate clear expectations with roles and responsibilities*”. Mentors wrote other specifics about expectations, including “*Discussing what it means to be a professional for teaching students*”.

#### *Review lesson plans*

Reviewing lesson plans was considered by the mentor teachers an essential preliminary feedback action aimed at confirming teaching practices and at the same time allowing for amendments to the plan prior to teaching. It was highlighted that any feedback on a mentee’s teaching plans needed to occur in sufficient time where the mentee has an opportunity to amend the plans with confidence. One mentor pointed out that reviewing a lesson plan immediately prior to teaching the lesson may diminish the mentee’s confidence. Mentors suggested the use of astute questioning as a process to advance the teaching plans, for instance, “*encourage the mentee to reflective on the lesson plan prior to teaching using guided questions*”. Although mentors outlined the necessity of providing positive and constructive feedback about the lesson plan structure (introduction, body, conclusion), mentor comments were strongly related to providing feedback that linked to pedagogical knowledge practices such as preparation, teaching strategies, classroom management, and assessment. In addition, several mentor teachers explained how it was a valuable feedback practice to review the lesson plan after teaching “*by asking pertinent questions (e.g., what did you think worked well in that lesson? How was your classroom management? How would you improve the lesson for future teaching practices?)*”. Reviewing plans before and after teaching through guided questioning aimed facilitate reflection on practice and hence opportunities for pedagogical growth.

### *Observe*

Providing feedback requires observation of teaching practices. Mentors suggested “*making formal arrangements for observing the mentee’s lessons*” on the basis that this strategy ensures that mentees are provided with formal observations. There were also suggestions around discussing “*informal observations of practice*”, where conversations can occur with the mentee at later stages. Importantly, mentor teachers wanted a focus on observing selected (and previously negotiated) pedagogical knowledge practices. For instance, they claimed that more intense observations could occur if the mentor focused only on classroom management or teaching strategies rather than attempting to observe all the teaching practices. It was articulated that some mentors have a tendency to interrupt the flow of a lesson by talking to the class around lesson details, instead of allowing for the lesson to proceed according to the previously negotiated mentee’s lesson plan. Despite the notion of observing the mentee teach without intervention, there mentor teachers indicated some exceptions, which included issues around students’ health and safety, or when a lesson goes beyond the mentor’s boundaries of acceptance (e.g., unfavourable student behaviour).

### *Oral feedback*

Oral (verbal) feedback was indicated by mentor teachers as a way to provide positive and constructive comments expediently. It was outlined that oral feedback could be presented formally and informally. That is, oral feedback can be articulated formally before and after designated lessons, particularly in reviewing a mentee’s teaching plans; while informal feedback can occur more spontaneously and at pivotal moments, whereas written feedback would require more time. Importantly, these mentors highlighted that using personal attributes (e.g., being supportive, listening, instilling confidence) was essential for facilitating oral feedback.

### *Written feedback*

It was clear that written feedback formalised the process, similar to a contractual agreement between two parties. Mentor teachers suggested that written feedback formally recognises the mentee's pedagogical achievements while guiding the mentee towards reflecting and improving practices. Mentors claimed that written feedback can occur around the mentee's planning, teaching, assessment and reflection with links to pedagogical knowledge practices (e.g., classroom management, teaching strategies, questioning). Written feedback can formalise the standard achieved by the mentee with a further focus on expectations for improving practices. It was expected that the mentor's written feedback would be translated into action with the mentee implementing the mentor's advice in subsequent lessons. It was also suggested that the mentor should write about the mentee's written reflections to affirm or dispute diplomatically the mentee's claims.

### *Evaluate (Guided self reflection)*

Development of teaching practices requires reflection that can lead to future pedagogical advancements (Schön, 1987). Mentor teachers emphasised the importance to *“read the mentee's reflection on practice and discuss how it aligned with your observations of their practices”*. Another mentor wrote, *“Highlight verbally and/or in writing where the mentee is perceptive about the reflection and how the reflection could be enhanced for future evaluations”*. There were comments that focused on guiding the reflective practices, such as *“Discuss with the mentee their evaluation of practices in relation to pedagogical knowledge and modelling, including the level of activity and engagement, and differentiated learning”*. Once more, the mentor's personal attributes was underlined to *“ensure the mentee is valued within the feedback in order to build confidence”*. Although reflections on practice *“Set further expectations for*

*future teaching”, “Reflection on practices should also reflect the expectations outlined at the beginning of the process”.*

### **Research Design and Findings: Case Study Two**

Case study two analyses 24 mentor teachers’ written notes devised when observing a final-year preservice teacher’s video-recorded lesson. Without guidance, the mentors were asked to note take feedback as they would normally undertake when observing a preservice teacher. The 24 feedback responses (notes made by the mentors during the lesson observation) were collated into commonalities (Creswell, 2014). Single responses were also reported in this study to determine the peripheral of mentors’ observations.

This case study (see also Hudson, 2014) presented a simulated activity involving a professional video recording of an Earth science lesson at a private high school with a final-year preservice teacher undertaking his final four-week practicum. He was teaching a Year 8 class on the topic of “rocks” and was video-recorded by a private media company (including sound engineer, camera man, and producer). He had prepared his lesson without consultation with the video company or researchers, as this lesson was considered part of his usual teaching program. This preservice teacher taught this lesson to two other Year 8 classes and will teach this lesson a total of five times during the week. The lesson was conducted over 2 x 45 minute periods, which was then edited onto a DVD with a total of 5 minutes and 50 seconds for the purposes of analysing key aspects of the mentee’s lesson. That is, the introduction, body and conclusion of the lesson remained as sequential events and allowed sufficient exposure for viewers to analyse teaching practices during these sections.

The DVD of his Year 8 science lesson was presented to a group of mentor teachers ( $n=24$ ). Within the one room sitting apart from one another, each mentor was asked to view the lesson and record notes as if being the preservice teacher's mentor observing his practices. At the conclusion of the video, the mentor teachers were given three minutes to finalise their feedback (considered somewhat representative of a real-world situation before they would normally enter into discussion with the mentee after the class has been dismissed).

Findings revealed variation in mentors' observations on the mentee's practices. In a simulated experience, these mentors' written notes indicated both positive feedback around the mentee's teaching and constructive criticisms for the mentee to improve practices. Mentors' recorded observations of both positive and constructive criticisms were clustered around three broad theoretical themes, namely: (1) visual, (2) auditory, and (3) conceptual. Mentors' positive comments and constructive criticisms will be analysed in relation to these three themes:

#### *Positive feedback*

When providing positive feedback mentors observed four distinct visual cues, that is, teacher movement, preparation, Information Communication Technology (ICT) visuals, and use of the whiteboard. There were seven auditory signals associated with positive feedback (questioning students, use of students' names, providing clear instructions, brainstorming prior knowledge, praising students, paraphrasing students' responses to questions, and projecting a clear voice). There were also seven cues combining visual and auditory observations that involved displaying and articulating: lesson aims/goals, monitoring groups, time management, behaviour management, revision of previous lesson, hands-on activity, and enthusiasm. Yet two observations extended beyond visual and auditory cues to incorporate conceptual or abstract

considerations such as the mentee using the inquiry approach and the structure of the lesson, while lesson content knowledge appeared to incorporate all three broad dimensions (Figure 1).

Every mentor response was included in this study, including single observations not aligned with other mentors' observations to determine the breadth of the observations. As a visual observation, teacher movement during the introductory phase of the lesson was observed and recorded as being favourable by 15 mentors (e.g., Mentor 6's comment was representative of the others: *"I liked how you moved around the classroom instead of staying in one spot at the front"*). Half the mentors listened to the mentee's questioning, with positive feedback about *"open-ended questions, as well as scaffolding ideas and making observations"* (Mentor 1), *"cueing types of responses"* (Mentor 16), and *"good questioning of chn's [children's] use of rocks and why... talked about closed-open questions – good use of both"* (Mentor 21). Interestingly, only 5 out of 24 mentors (1, 7, 12, 23, 24) recorded observations about both questioning and monitoring groups (Table 1).

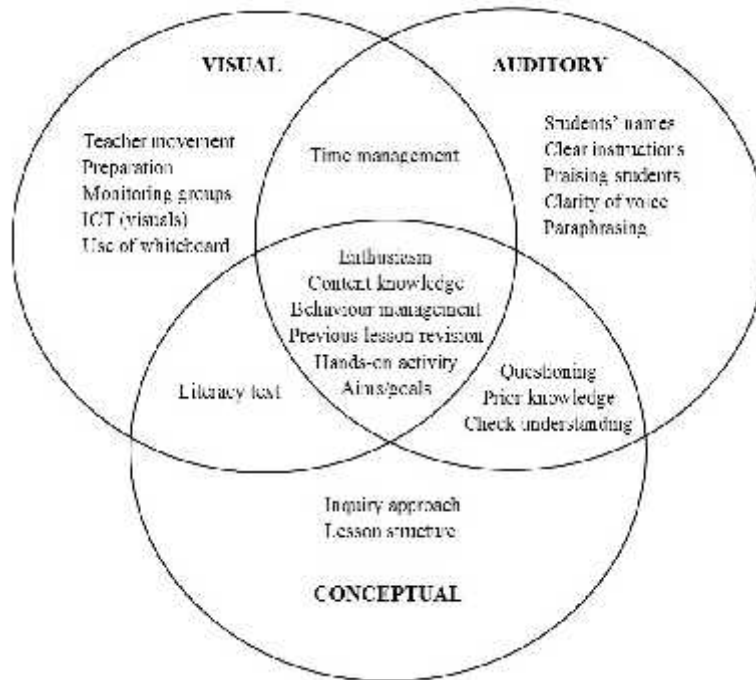


Figure 1. Examples of the mentee's feedback within the three dimensions

Time management appeared significant in mentors' auditory observations as a positive mentee practice where ten mentors recorded comments such as the preservice teacher: "*advised students with expectations of working within a time limit*" (Mentor 1), and "*provided a clear timeframe to complete work*" (Mentor 22). Nine mentors recorded their observations (visual, auditory, and conceptual) about the effectiveness of the mentee's behaviour management, for example: "*Behaviour management – didn't stop whole class and instead just used eye contact and said 'girls' in a quite quick voice*" (Mentor 1), and "*cueing types of responses with 'hands up' and 'when I tell you to move' was a strength*" (Mentor 16).

Although seven mentors recorded visual observations of the use of ICT as a positive practice (e.g., "*good use of pictures and ICT to engage your learners*", M21), five or less mentors focused on other teaching elements such as brainstorming prior knowledge, using a hands-on activity, praising students, having a clear teaching voice, and a range of singular comments from



mentors (e.g., paraphrasing students' responses, demonstrating enthusiasm for teaching, and checking for understanding; Table 1). Surprisingly, only one mentor (M13) focused specifically on lesson content knowledge as a positive practice, despite the significant literature around preservice teachers requiring adequate content knowledge to teach in schools (e.g., see Goodrum, Hackling, & Rennie, 2001). It would appear that mentors may not consider the preservice teacher's content knowledge as an important focus for observation or it may be more difficult to determine during lesson observations. Similar to other conceptual observations, observations of content knowledge can represent an abstract understanding, and enthusiasm, behaviour management and previous lesson revisions may also be abstract and can incorporate observable visual and auditory clues (Figure 1). There are grey shaded boxes in Table 1 where mentors indicated the mentee's most positive practice (an area of strength). Half the mentors outlined two areas of significant strength (e.g., Mentors 5, 8, & 10).

#### *Constructive criticisms*

Nearly all mentors' constructive criticisms appeared mainly as a result of the mentors' auditory dimension (e.g., complex instructions, more "wait time", voice tone/volume, paraphrasing, vocabulary scaffolding, language usage). Although no mentor recorded any more than four constructive criticisms, eight mentors had only one critical comment while five mentors' comments did not align with anyone else's criticisms (questioning, discussion time, assessment, whiteboard work, language usage; Table 2). The highest correlated observation was focused on the mentee's provision of complex instructions with critical comments such as: "*There was too much information without recapping on directions for the tasks*" (Mentor 7) and Mentor 8 also claimed that there was "*too much information at the same time*". Even so, this view was

articulated by half the mentors, signifying that at best only half the mentors may concur with each other's observations.

There were contradictory observations recorded in mentors' feedback where 9 mentors had claimed the mentee's instructions were clear while 12 stated the instructions were too complex. Indeed, four mentors (7, 8, 13, 22) claimed the instructions were both clear (positive) and complex (constructive criticism). These contradictions would need to be explained through interviews with participants in a follow-up study. Similarly, 12 mentors observed the mentee's presentation of the aims of the lesson as positive while 3 claimed this as a criticism. More than half the mentors ( $n=15$ ) highlighted teacher movement as positive while two mentors recorded this observation as disconcerting pacing around the room. Conflicting information provided by these mentors can be noted in how three mentors (1, 6, 22) claimed the mentee's voice was a positive aspect of the teaching while two mentors (9, 10) highlighted this as an area for improvement. In addition, contrasting observations were made when the mentee paraphrased students' responses and his use of the whiteboard (Tables 1 & 2). The number of constructive criticisms was around one third of the total positive comments, with a total of 146 positive comments and a total of 52 constructive criticisms from the 24 mentors.

## **Discussion**

The findings in Case Study One illustrated how mentors devised strategies for providing feedback across the six practices (i.e., expectations, reviewing plans, observations, oral feedback, written feedback, and evaluation of teaching). Understanding that there are feedback practices is one aspect; however mentors also need to strategise on ways for actioning the feedback. Ensuring shared expectations with common agreement on procedures and feedback practices was inferred to assist in understanding roles and responsibilities for both mentor and mentee.

Reviewing teaching plans requires the mentor to have knowledge about lesson structures with an ability to ask astute questions that draw from the mentee responses linked to pedagogical improvements. There are questioning frameworks, such as ORID questioning techniques (Stanfield, 2000), that could be employed to assist mentors. Astute questioning can allow the mentee to analyse practices towards a reconceptualisation of practice. It is paramount that observations have been arranged previously between the mentor and mentee so that both understand the focus of observation, which can later present focused dialogues to facilitate deeper understandings about teaching practices. There are ways to provide timely oral and written feedback based on expectations (goal referenced, tangible and transparent, see also Wiggins, 2012) by drawing on the mentor's personal attributes to maintain a supportive learning environment for the mentee. It was emphasised repeatedly that the mentor's feedback had to be constructive and thus instilling confidence and positive attitudes for advancing teaching practices. The mentor's personal attributes need to be consistent towards building the mentee's powers of self reflection. A key strategy indicated in this case study was for the mentor to model self reflection after modelling the teaching of a lesson to the mentee. Indeed, mentoring preservice teachers encompasses other roles that may not be visible under the term supervision. It was suggested strongly that the mentor's open and honest appraisal of a lesson would facilitate similar actions from the mentee after teaching a lesson.

The findings for Case Study Two demonstrated variability in mentors' recorded observations for providing feedback with no two mentors' records being the same (see also Hudson, 2013b). Such variability of observations warrants a multifaceted approach (Tillema, 2009) with a community of mentors (Hudson, 2013a) to be utilised for observing and providing professional opinions on preservice teachers' practices. Feedback from independent mentors may help the mentee to

determine commonalities in mentors' feedback and prioritise areas of significance for pedagogical development. The findings in this study imply that quality feedback needs to come from multiple perspectives where mentors can verify opinions (e.g., Kimball, 2002; Lock et al., 2009). As a preservice teacher is allocated to a classroom for a block of time (e.g., four weeks), there can be multiple opportunities for a mentor to enlist colleagues for their opinions on the mentee's practices. Mentor-mentee conversations are designed to scaffold the mentee's learning about how to teach (Timperley, 2001). Multiple perspectives can assist mentees to reflect on the commonalities of mentor responses within the observational dimensions (viz: visual, auditory and conceptual) towards indicating a reality. However, ontological perspectives based around the nature of reality were not elucidated in this study. Instead, this study aligns with constructivist viewpoints where multiple realities can be constructed by observers (see Denzin & Lincoln, 2011; Hatch, 2002). Thus, more methodical approaches on observations for purposes of providing feedback are needed (see also Harrison et al., 2005).

In one sense, these mentors acted as ethnographers observing the preservice teacher's practices, providing descriptive accounts of behaviour. They also attempted to provide focused observations "where they could with some confidence discern the relevant from the irrelevant" (Angrosino & Rosenberg, 2011, p. 468). Although reasons for mentors' confidence in their observations needs further investigation, their teaching experiences, knowledge of the classroom and students, and previous experiences with preservice teachers may be pathways for having confidence in their observations (see also Bandura, 1986). Angrosino and Rosenberg point out that focused observation "almost always involved interviewing because researchers could not rely on their own intuition to make such discernments" (p. 468). Yet in this simulated activity of mentors observing a video of a preservice teacher in practice, there appeared no single method

for maximising observational accounts and minimising mentor bias to determine valid and reliable results (see also Gold, 1997). In addition, mentors had not verified their observations with an opportunity to interview the preservice teacher through a mentor-mentee dialogue. The variability of mentor observations tends to suggest that a more systematic step of “selective observations” may produce more consistent results between mentors (Angrosino & Rosenberg, 2011, p. 468); however this is an aspect requiring considerable research.

Although not obvious in this current study, and in addition to the three dimensions for observation (visual, auditory, and conceptual), there may be an emotional dimension when categorising mentor observations for feedback but this would require investigation. The limitations of the study include: (1) the quality of each mentor’s recorded observations was not determined; (2) feedback was not analysed on how it may have stimulated the mentee’s reflection on practice, which is apparently a key aim of mentors’ observations (e.g., Rajuan et al., 2008; Schön, 1983, 1987), and (3) the mentoring experience levels of individual mentors were not aligned with the written observations to determine whether more experienced mentors may have recorded similar observations.

## **Conclusion**

This study outlined 28 mentors’ strategies for providing feedback. A bank of strategies for providing feedback was deemed to be useful in the mentoring process and such strategies can aid in guiding the mentor’s role. As one aspect of the feedback model (observation), this study also investigated 24 mentors’ observations on one preservice teacher’s science lesson where they had written notes ready for oral feedback to the mentee. Mentors presented feedback on the preservice teacher’s practices after observation; yet their feedback from observations varied considerably. Further studies are needed to determine how mentors can be provided with

observational tools to facilitate greater consistency between mentors' observations. Mentors' views also need to be sought on what they deem to be important for preservice teacher development. Further qualitative research is also required to determine the connection between a mentor's philosophy of teaching (and mentoring) and what may align with their observations of teaching practices. This may help to understand in which ways the mentor's bias is connected to the feedback provided. For instance, an English teacher may focus on the mentee's language more strongly than a science teacher, which has implications when presenting feedback.

This study makes a theoretical contribution to mentoring by identifying three dimensions for mentor observations (i.e., visual, auditory, and conceptual), which will require further exploration to understand the range of observations of practices that may reside within each dimension. Devising "*observations of practices*" could be developed into a self-evaluative tool for mentors for understanding their observational foci. Furthermore, investigations can include the specific observations articulated to the mentee that make a difference to the mentee's teaching practices; hence tracking the mentor's feedback to the mentee's practices to student outcomes, which will provide crucial links to the effects of mentoring for effective teaching. Finally, it can be argued that mentors, in their observational roles of preservice teacher behaviour, become ethnographers; nevertheless they are likely to be untrained in data collection and analytics. Mentor education programs may need to embed succinct and pertinent ethnographic training that focuses on observational tools with ways to analyse preservice teacher practices. Such professional development may also open prospects for mentor involvement in higher degree studies at the tertiary level, which could generate more research in this field.

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Table 1. Mentors' (n=24) positive feedback on the mentee's lesson

Positive Feedback		1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Teacher movement	15	✓				✓	✓		✓	✓	✓	✓		✓		✓		✓	✓	
Aims/goals	12	✓	✓		✓	✓	✓	✓	✓	✓		✓						✓		✓
Questioning	12	✓		✓	✓		✓	✓	✓	✓						✓	✓	✓		
Preparation	11	✓		✓	✓			✓					✓	✓	✓				✓	
Monitoring groups	11	✓				✓		✓	✓		✓	✓	✓							✓
Time management	10	✓	✓						✓	✓				✓			✓	✓		✓
Students' names	10				✓	✓		✓			✓	✓		✓	✓	✓			✓	
Clear instructions	9	✓	✓	✓	✓			✓	✓	✓				✓						
Behaviour management	9	✓		✓		✓		✓		✓							✓		✓	✓
Previous lesson revision	8	✓		✓		✓	✓	✓	✓						✓	✓				
ICT (visuals)	7			✓	✓		✓	✓			✓		✓							
Prior knowledge	5			✓			✓		✓			✓		✓						
Hands-on activity	5											✓	✓			✓				
Praising students	5	✓				✓				✓										
Inquiry approach	4				✓									✓	✓					
Lesson structure	3										✓									
Clear voice	3	✓					✓													
Paraphrasing	2																		✓	
Content knowledge	1													✓						
Literacy focus	1															✓				
Use of whiteboard	1																			✓
Enthusiasm	1															✓				
Checking for understanding	1								✓											
per mentor		10	3	7	7	7	6	9	9	7	5	6	4	8	4	7	3	4	5	5

\* Mentor ;

NB: A grey shaded area signifies the mentee's strongest area as determined by that mentor's observation

Table 2. Mentors' (n=24) constructive criticisms about the mentee's lesson

Critical feedback		1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Complex instructions	12					✓	✓	✓	✓					✓				✓	✓	✓
Tempo of lesson (rushed)	5					✓			✓			✓		✓					✓	
Instructions before moving	4			✓				✓												
Checking for understanding	4		✓																✓	
More student input	4								✓	✓				✓						
Unclear aims/goals	3										✓						✓			
More "wait time"	3					✓				✓		✓								
Teacher movement	2														✓		✓			
Lesson structure	2											✓				✓				
Voice tone/volume	2									✓	✓									
Called student "mate"	2	✓											✓							
Paraphrasing	2				✓											✓				
Vocabulary scaffolding	2			✓															✓	
Questioning	1																			
Discussion time	1									✓										
Assessment	1								✓											
Whiteboard work	1											✓								
Language usage (e.g., gonna)	1																			✓
per mentor		1	1	2	1	3	1	2	4	4	2	4	1	3	1	2	2	1	4	2

\* Mentor

**Teachers' perceptions of the Professional Standards:  
Opportunity or constraint for the first generation of accredited teachers?**

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**Introduction**

The purpose of this paper is to examine the Professional Standards for Teachers and their associated accreditation measures from the perspective of one key group of stakeholders - the first generation of accredited teachers. Specifically, this paper explores how second-stage teachers (those who are in their fourth to tenth year of teaching and are accredited at Professional Competence / Proficient Teacher) perceive the impact of this framework for their own teaching careers and for the profession more broadly. This paper presents a qualitative analysis of data generated during interviews with twenty-four accredited teachers. It argues that, whilst teachers consider the system to contain elements of both opportunity and constraint, overall they consider the system to be a *missed opportunity*, lost amongst a series of poor implementation processes. These findings are also considered in the light of proposed future reforms to the system. I make these arguments as both an early career researcher and also as a colleague amongst this generation of teachers.

**Background and Literature**

The past decade has seen substantial shifts in the ways in which Australian teachers' careers begin, develop and progress (or not). There continues to be an ongoing increase in the numbers

entering teaching through postgraduate pathways, rather than undergraduate single or combined degrees (Productivity Commission, 2012, p. 120). Current Australian research estimates that twenty-five percent of new teachers leave the profession within their first year and forty percent leave within their first five years (Riley & Gallant, 2010). Furthermore, it is often claimed that teaching lacks clearly defined career paths (Dinham, 2011; Skilbeck & Connell, 2004). Teachers who have made it past the beginning teacher phase are seeking role diversification and a greater choice of career pathways, inside and outside of the classroom (Natale, Gaddis, Bassett, & McKnight, 2013; Peske, Liu, Johnson, Kauffman, & Kardos, 2001; Rinke, 2011; Smethem, 2007). Contemporary notions of work and career are changing and teaching must compete against many other professions to attract and retain quality staff (Mayer, 2006; Schleicher, 2011).

At the same time, arguments that teaching has been “strong industrially, but weak professionally” (Ingvarson, 2013, p. 3) continue to fuel the drive towards raising the ‘professionalism’ (e.g., standards of practice) and ‘professionalisation’ (e.g., status) of teaching. A strong evidence base demonstrating the relationship between students’ learning outcomes and the quality of classroom teaching (Barber & Mourshed, 2007; Hattie, 2008; Rivkin, Hanushek & Kain, 2005; Rockoff, 2004) has prompted many countries to produce written standards to define quality teaching, including Chile, America, England, Mexico and New Zealand (OECD, 2013). Elmore (1996) argued for the importance of standards as an “external norm” to professionalise teachers by making them look beyond their own personal classroom experience towards a broader professional community, with standards giving “visibility and status to those who exemplify them” (p. 19). The existence of standards underpins the argument that teaching is equivalent to other professions deemed to have the capacity for evaluation and accountability (Ingvarson, 2002).

Recent Australian governments have sought to reform how schools attract, support and retain high-quality teachers and leaders (COAG, 2008; MCEETYA, 2008). The introduction of standards and accreditation has been mooted as a major reform effort to address these current challenges (Dinham, Ingvarson & Kleinhenz, 2008). In 2004, New South Wales established a formal body responsible for the provision of standards and accreditation, the NSW Institute of Teachers (NSWIT). Teachers commencing their career from 2004 onwards, those returning to the profession after an absence of five or more years and teachers coming from inter-state or overseas are registered as 'New Scheme' teachers. The NSWIT produced a framework of Professional Teaching Standards (NSWIT, 2004) with four stages (graduate, competence, accomplishment, leadership). New Scheme teachers must achieve the second-stage through accreditation within their first three to five years and must then 'maintain' this through one hundred hours of professional learning over five years.

The developments in NSW have occurred within a broader national context. In 2010, the Australian Institute for Teaching and School Leadership (AITSL) was formed to lead the provision of standards, accreditation and professional learning on a national scale, including the development of the 'Australian Professional Standards for Teachers' (AITSL, 2011). Different states and territories have had distinctive responses to AITSL, with NSW developing a revised set of state-based standards (NSWIT, 2012). Recent policy proposals from the NSW government suggest that the Standards will be expanded to apply to all teachers (NSWDEC, 2013) and possibly linked with amendments to current salary structures for teachers in public schools (NSWDEC, 2014). From a policy and governance perspective, this has been a time of continual change and reform in the systems surrounding teachers.

Somewhat unusually, the NSW government directly controls this process through the *Institute of*

*Teachers Act 2004*. Ingvarson (2010, 2013) has noted that teaching is unique amongst the professions because its registration and certification body is controlled by the government, whilst most other professions are trusted to manage their own systems independently. The Professional Standards are an example of a stage-based model that attempts to outline the teaching career from novice to expert. Some researchers, most notably Dall’Alba and Sandberg (2006), argue that this model ignores the horizontal aspects of career development at the expense of vertical progression. Others, in particular Dinham et al. (2008), argue that the Standards establish an important framework for the formal recognition of teachers’ careers. As we approach the ten-year anniversary of the New Scheme system in NSW and face the prospect of further reforms, the time is ripe to consider the views of the first generation of teachers whose careers have played out under this system.

## **Research Design**

The data presented in this paper was gathered as part of the qualitative strand in a larger mixed methods research project on teachers’ career trajectories. A purposive sample of twenty-four New Scheme teachers from schools in NSW was recruited using email via the ‘TeachMeet’ professional learning forum. This project targeted second-stage teachers, that is, accredited teachers who are in their fourth to tenth year of teaching (Donaldson, 2005; Johnson, 2009). Having overcome the ‘survival’ concerns facing novice teachers, second-stage teachers feel more independent, have a greater sense of pedagogical mastery and can focus beyond their immediate needs, and are thus able to start planning their career development and goals (Eros, 2011). They are also often at a critical point in their careers where they will choose whether or not to commit themselves to teaching (Day, Sammons, Stobart, Kington & Gu, 2007; Huberman, 1993). The diversity of the sample reflects the broader population of New Scheme teachers, as shown in



Table 1. The views of the participants described here are reported using pseudonyms. Data was generated using a semi-structured interview guide with teachers from October to December 2013. Teachers were asked about their views on the Standards, their experiences of undergoing accreditation and maintenance, and the degree to which being a New Scheme teacher influenced their attitude towards their career and/or profession. Interview transcripts were analysed using a process of coding and categorisation with NVivo software (Bazeley, 2013), through which three key themes were discerned.

Table 1. Comparison of interview sample with New Scheme teacher population

<b>Variable</b>	<b>My Sample (N = 24)</b>	<b>The Population (N = 24, 771, as at July 2013)</b>
<b>Gender</b>		
Male	7 (29.17%)	5, 999 (24.22%)
Female	17 (70.84%)	18, 772 (75.78%)
<b>Age</b>		
20-29	6 (25.00%)	8, 194 (33.08%)
30-39	11 (45.83%)	10, 275 (41.48%)
40-49	6 (25.00%)	3, 991 (16.11%)
50+	1 (4.17%)	2, 311 (9.33%)
<b>School Level</b>		
Primary	12 (50.00%)	Unknown
Secondary	12 (50.00%)	Unknown
<b>School Sector</b>		
Government	15 (62.50%)	16, 487 (66.56%)
Catholic	3 (12.50%)	3, 705 (14.96%)
Independent	6 (25.00%)	4, 579 (18.49%)
<b>Location</b>		
Metropolitan	21 (87.50%)	14, 982 (60.48%)
Rural/Regional	3 (12.50%)	8, 660 (34.96%)
Remote	0	433 (1.74%)
Unknown	0	696 (2.81%)
<b>Employment status</b>		
Permanent	20 (83.33%)	13, 712 (55.36%)
Temporary	4 (16.67%)	6, 880 (27.78%)
Casual	0	4, 041 (16.31%)
Unknown	0	138 (0.56%)
Current leave of absence	2 (8.33%)	3, 055 (12.33%)

## Findings

### *Opportunity - “I think we’re just a new breed”*

There are several elements of the New Scheme system that teachers perceive to be a positive opportunity for the teaching profession. The actual document with the seven standards and their component elements is perceived by many teachers as a benchmark in making explicit their main roles and responsibilities. The document was often described as a “*guide*”, with an emphasis on normative notions of what teachers “*should*” be doing:

*"I think they're a really good guide for what you should be doing and even what you should be thinking about or working towards."* (Amy)

Teachers have accepted the need for and value in having explicitly written Standards, describing the document as “*important*”, “*legitimate*”, “*worthwhile*” and “*necessary*”. Many teachers also suggested that the Standards are most useful for beginning teachers, providing a “*direction*” and “*something concrete to refer to*” during the uncertain and challenging first phase of starting a teaching career. The process of undergoing accreditation was also felt to be a great opportunity to connect beginning teachers with their more experienced colleagues through mentoring:

*“It helped me . . . to have those conversations with supervisors and experienced teachers. Yeah, everybody’s busy and you don’t want to be sucking the time from people, but when there’s something you have to do, they’re a bit more lenient in giving you some of their time.”* (Amy)

Many teachers felt that, without this compulsory requirement, beginning teachers would struggle to receive the mentoring and guidance that they needed. Accreditation creates a legitimate space within which new teachers can seek support from their older colleagues.

Some teachers were optimistic about the potential for the New Scheme system to raise the status and professionalism of teachers:

*“I think that if you're a New Scheme teacher coming in, you're only going to stick with teaching if you are serious about it . . . It will raise the status because you're actually going to have academically focused teachers as opposed to school holidays focused teachers. So, I think over time it will. I don't think it will happen initially and I don't think it will happen for the older crowd. I think it will just be New Scheme teachers onwards . . . there will be a different focus on what it means to be a teacher.”* (Elizabeth)

New Scheme teachers described themselves as a “*new breed*”, indicating that they perceive this system as an opportunity for change in the teaching profession. Elizabeth’s comment above highlights the degree to which new scheme teachers feel set apart from their ‘old scheme’ colleagues. This division emerged as a key theme that I will return to below.

*Constraint - “It’s just a pesky piece of paperwork that you’ve got to do”*

The overwhelming view of teachers about the process of accreditation was that it was a burden, evident in their use of terms such as “*pressure*”, “*stress*”, “*annoying*”, “*cumbersome*”, “*a chore*”, “*onerous*” and “*a pain*”. The process itself was thus not seen as an opportunity to learn or reflect, but rather as a constraining experience that simply had to be endured. Despite being optimistic that accreditation offered the chance for mentoring, many teachers described how they had received little or no actual mentoring. The mentoring process was often described as “*the blind leading the blind*”, with New Scheme teachers typically knowing more about the system than those who were supposed to be supporting them. Similarly, despite optimism for the idea of a maintenance process to track their professional learning, teachers overwhelmingly described

the current online system for logging hours as also being difficult and cumbersome to use. Casual and temporary teachers found the maintenance process particularly constraining because the onus was on them to find and pay for their own learning. Once they had done the minimum requisite hours, teachers also felt a disincentive to do further learning:

*“I do feel that there's a financial burden on the school to pay for me to get hours and that now that I've got my hours, no more professional learning for me for a little while! You know, there seems to be, its needs based on your accreditation hours, not what the school needs.”*

(Kaitlyn)

These points of frustration served to diminish teachers' earlier enthusiasm for the system.

Being a New Scheme teacher is ultimately seen as constraint because teachers feel there is no value in being a part of a scheme that they don't personally gain anything from:

*“I resented that I have to pay \$100 a year to this organisation that does nothing . . . I mean it's not really like you get any benefit out of it.”* (Alison)

Every teacher interviewed questioned the fairness of paying a compulsory annual fee that did not apply to their older colleagues. This sense of inequity was further compounded by teachers' clear frustration with the NSWIT, in particular its poor communication and the difficulty in contacting them. Whilst on the surface these may seem like trivial complaints, the end result is that teachers feel frustrated and disconnected from the system.

*“Now we've got accreditation just like lawyers do and everything. It's like, well, we don't. It's a mixed up, mashed up, thrown out there too quickly before it was ready sort of system that has just turned people off.”* (Louise)

Teachers also expressed frustration at having both state and national standards instead of a nationally consistent system. Despite the existence of an impressive website and social media presence, twelve of the twenty-four teachers in this study were completely unaware of the existence of AITSL, highlighting that simply having a professional body is no guarantee that teachers will engage with it.

*Missed Opportunity - "If we're all for it and we're here to turn up to play, then you need to come to the party"*

The generally poor implementation of the system so far has led to many teachers describing the system not as an opportunity but rather as a missed opportunity. Most teachers felt that implementation of the Standards had failed to bring about change because they don't actually use them in their regular planning or practice:

*"It was really nice to actually stop and look at my lessons . . . And then, of course, we all just went back to work, you know? So that's the problem, I guess." (Michelle)*

*"My thoughts are that they [the Standards] are very nice when you're sitting in some office, but that no one who's actually teaching is probably giving much of a s\*\*t about it when they are in the classroom." (Tristan)*

Whilst having the written document is seen as an important opportunity for teachers to define their practice, the fact that teachers don't actually use the Standards reflects the missed opportunity to embed their use as a tool for enhancing the profession. Despite their desire to be supportive and active participants of the system, teachers felt let down by the low expectations and lack of rigour in the accreditation process:

*"As long as they're not going to just approve any old thing that comes though. If it's just going*

*to be you submit it and you're guaranteed it's done, then that's not going to help.” (Tanya)*

*“I think you could be the most incompetent teacher in the world and still cherry-pick enough decent examples to pass that.” (Tristan)*

Several teachers described accreditation as “a joke”, showing that this experience has ‘turned off’ teachers who otherwise liked the idea of the system. Teachers’ disappointing experiences of the process has led many to write it off as simply another bureaucratic ‘box ticking’ expectation and something to engage with at only the most superficial, mandatory level.

The other substantial missed opportunity can be seen in the fact that New Scheme teachers feel themselves divided from their ‘old scheme’ colleagues:

*“These are standards and expectations that so many teachers who have been doing it for twenty, thirty years just do not grasp what professional actually means in the current day and age.”*  
(Cameron)

This sense of inequity and division was evident in teachers’ recurrent descriptions of “resentment” and “jealousy”. The negative view of the system by their old scheme colleagues has also created a strong degree of skepticism amongst New Scheme teachers.

*“So, the pre-04 people are mostly like, oh my God, you have to do all that c\*\*p. And the new scheme teachers are like, yeah, we have to do all this c\*\*p. That's basically the deal.”*  
(Tristan)

More than half of the teachers in this study were pessimistic about the likelihood of the system raising the status of teachers. Worse still, many perceived the current system to create a facade of professionalism that attempted to conceal the need for meaningful changes. Teachers expressed

the desire to raise the status and professionalism of teaching, but ultimately saw the New Scheme system as a missed opportunity to achieve this.

## **Discussion**

Almost two decades ago, Hargreaves and Goodson (1996) warned that attempts to professionalise teaching through the “technical” and “scientific” definition and categorisation of teachers’ knowledge and practice was potentially problematic and could minimise other important dimensions of teachers’ work. Several participants echoed this:

*“I think it's just the bare basics of being in the classroom. I don't think it deals with your pastoral care, your interaction in the playground. That's the thing, the relationships and the rapport side of it . . . There's nothing about the human side. It's all about the mechanical side of things.”*

(Elizabeth)

Teachers’ perceptions of the Standards as being highly “wordy” and over-emphasising the practicalities of teaching at the expense of teacher-student relationships reflects the difficulty with conceptualising generic standards to apply across all contexts. The majority of teachers in this study also indicated that they were not interested in working towards higher levels of accreditation in the future, thus also calling into question the four-stage structure outlined in the Standards.

The findings of this study show a substantial gap between the goals of the New Scheme system and teachers’ reported perceptions and experiences. Rather than drawing teachers into a community with shared vision and practices, the New Scheme system has created a division amongst teachers and a strong degree of skepticism for what Standards and accreditation can offer the teaching profession. The findings in this study suggest that the proposed move to



require all teachers to be accredited under the Standards (NSWDEC, 2013) is a key turning point that could make or break the system. Teachers in this study recounted multiple stories about the skepticism and at times derision with which their ‘old scheme’ colleagues view the system as it currently stands:

*“They [older teachers] are so bitter about it, really bitter, and it does create a divide . . . it's definitely something in staff meetings that creates a heated debate.” (Amy)*

As Hattie noted in a recent AITSL evaluation, “the success, or not, of the Standards influencing teacher quality will largely be a function of the success of their implementation” (AITSL, 2014, p. 5). The coming reforms thus provide the government with an opportunity to improve the current system and avoid repeating past implementation mistakes.

Very recent international data from the OECD TALIS survey shows that access to quality mentoring has a strong positive effect on teachers’ self-efficacy and job satisfaction (OECD, 2014, p. 194). Teachers in this study felt let down by a mentoring process that was inconsistent and at time non-existent, highlighting the need for the provision of greater support for school leaders. At the time of introducing accreditation, one of the principal advocates for Standards in Australia, Dr. Lawrence Ingvarson, warned: “the message is clear from too many half-baked teacher evaluation schemes. Do not venture into this field of performance assessment unless there is a clear possibility of doing it well - in ways that are professionally and publicly credible” (Ingvarson, 2002, p. 25). Teachers in this study reported multiple stories of frustration and disappointment when it came to being assessed through the accreditation process and felt that they did not receive meaningful feedback from their accreditation experience. Internationally, Australia ranks below the OECD average for teachers receiving meaningful feedback on their

performance (OECD, 2014, p. 139). The act of undergoing accreditation represents a key opportunity to engage with teachers through both mentoring and feedback, yet to date this ‘teachable moment’ has not been well utilised.

Teachers also reported stories ranging from amusing to infuriating to absurd when it came to their experiences of interacting with the NSWIT. Whilst this organisation has recently merged with the larger and as yet relatively unknown NSW Board of Studies, Teaching & Educational Standards (BOSTES), the need for teachers to connect with the Institute itself is important. If practitioners in any other profession held such negative views of the institutional body designed to support their professional development, would this not be a cause for concern? Teachers were also disheartened by the negative public perceptions of teachers, both amongst their parent communities and in Australian society more broadly. For this generation of teachers, enhancing the professionalism of teachers themselves is a necessary but not sufficient part of the process, as teachers were equally if not more keen to enhance the public’s view of teachers.

## **Conclusion**

The findings presented in this study have emerged from the early stages of analysis, with the next step being to further investigate why these teachers have responded this way and what implications this may bring. Overall, the first generation of accredited teachers perceives the Standards as potentially useful, but find the accreditation and maintenance processes surrounding them to be constraining. The common perception that the New Scheme system has been poorly implemented has led many teachers to consider the system as a missed opportunity that has failed to ultimately raise the status of the profession. The lesson here is that the process is equally (if not more) important as the product. It matters less how many teachers complete their

accreditation or even how many go on to higher levels, and more the degree to which teachers ‘buy-in’ to the system as a legitimate and worthwhile process. The Standards themselves are just a starting point. The findings in this study show that, as we prepare for reform to bring all teachers under this system, careful implementation will be needed to ensure that teachers view the Standards as more of an opportunity and less of a constraint. Success during the next phase may determine the impact of the Standards on ‘professionalising’ teachers for future decades.

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# **Empowering teachers to embed Indigenous perspectives: A study of the effects of professional development in traditional Indigenous games**

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## **Abstract**

Since the need to embed Indigenous perspectives within Australian schools has become formally recognised as a Cross Curriculum Priority within the Australian Curriculum (ACARA, 2013), the practicalities of implementing this requirement in schools and classrooms are yet to be explored. Many classroom teachers have had to shoulder the responsibility to plan and implement opportunities for children to learn about Indigenous perspectives through the curriculum, with limited opportunities for professional development to enable them to do so comfortably and effectively. This study explores teachers' participation in, perceptions of and attitudes towards implementing Indigenous perspectives within the curriculum. Further to this, the impact of an ongoing professional development program in Traditional Indigenous Games (TIG) that aims to assist teachers to embed Indigenous perspectives is examined. Survey data from seven Year 5 teachers were analysed using descriptive statistics to establish a picture of their existing classroom learning environment as well as changes across time. The seven teachers also took part in an intervention program which involved ongoing professional development based on the implementation of TIG in their classrooms over a period of 6 months. The study aimed to determine if, and in what way, the TIG intervention had affected teachers, their pedagogy and their classroom environment. Prior to the intervention teachers identified their own lack of knowledge and understanding as the most common obstacle to embedding Indigenous perspectives in their classrooms, and as a result, they were apprehensive and did not regularly embed Indigenous perspectives. Following the TIG intervention, teachers reported an increase in the amount of time they spent embedding Indigenous perspectives each day in their classes; that they felt more knowledgeable and confident about teaching Indigenous perspectives; and that they enjoyed teaching Indigenous perspectives much more as a result of the professional development intervention program.



## Introduction

*“Weaving the Indigenous story into the fabric of education through teaching about Indigenous cultures and perspectives in schools has been identified nationally as key to improving outcomes for Indigenous peoples.... and will enhance the educational experiences of non-Indigenous students as well. It will not only give them a more accurate and richer understanding of Australia’s history and culture, it will help them to understand how we got to where we are today; and how we might move forward together. It’s about reconciliation.” (EATSIPS, 2011)*

Embedding Aboriginal and Torres Strait Islander perspectives within the Australian school curriculum has been recognised as a way to enrich learning outcomes for all students whilst paving the way towards reconciliation. As such, intercultural understanding is a General Capability outlined in the Australian Curriculum (ACARA, 2012) which highlights the need for students to respect and appreciate other cultures and beliefs as well as their own, in order to recognise differences, create connections and cultivate mutual respect. Intercultural understanding is seen as an essential feature of achieving reconciliation in Australia, and was evidenced in the Australian Law Reform Commission’s Reconciliation Action Plan (2009). The Australian Curriculum sets out to achieve these reconciliation goals by promoting active and informed citizens who understand and acknowledge the value of Indigenous cultures, and possess the knowledge, skills and understandings to contribute to, and benefit from, reconciliation between Indigenous and non-Indigenous Australians (ACARA, 2012).

The Australian Curriculum identified Aboriginal and Torres Strait Islander histories and cultures as being a Cross Curricular Priority that all young Australians should learn about by directing:

*...to ensure that all young Australians will be given the opportunity to gain a deeper understanding and appreciation of Aboriginal and Torres Strait islander histories and cultures,*

*their significance for Australia and the impact that these have had, and continue to have, on our world. (ACARA, 2012, p. 22)*

For this to be achieved, learning experiences which incorporate Indigenous perspectives need to be “consistent across the curriculum and reinforced in learning areas” (ACARA, 2012, p. 22). Teachers in Australian schools have been tasked to address and embed Indigenous perspectives in their classroom learning experiences across all curriculum areas, with scant support and training to effectively implement this policy initiative.

This study explores the impact of these curriculum policies on Australian classroom teachers. Furthermore, the study trials Traditional Indigenous Games (TIG) as a catalyst to support teachers to develop further opportunities to embed the histories, culture and traditions of Australia’s Indigenous peoples. If playing TIG does provide greater opportunities for teachers to explore Indigenous perspectives with their students then it would assist teachers to achieve the Cross Curricular Priorities (ACARA, 2013) and enhance their students learning outcomes.

## **Literature Review**

### *Indigenous perspectives in the curriculum*

The notion of building bridges between Indigenous and Western knowledge systems is not new within education circles. The issues and practices surrounding Indigenous knowledge and culture were taken on board by the education community within Australia and were reflected in the Melbourne Declaration on Educational Goals for Young Australians (MCEETYA, 2008). This document identified the need for student learning outcomes to demonstrate a respect and appreciation for Indigenous culture. The importance of integrating Indigenous knowledge and culture into a child’s learning experiences was further emphasised in the development of the

Australian National Curriculum, where embedding Indigenous perspectives has become a cross curricular priority for all Australian schools so that cultural knowledge and experiences become shared and valued.

Several ways to integrate Indigenous perspectives into schools through the environment, the pedagogy and the curriculum have been suggested (ACARA, 2012). In practice, teachers still struggle with or avoid including Indigenous perspectives within their classrooms for a number of reasons. A study conducted in New South Wales found teachers did not include Indigenous perspectives because they felt they did not know the rules relating to Indigenous social norms, were worried about offending Indigenous and non-indigenous people, and just wanted to find safe ground for themselves professionally (Western NSW Region RAET, 2010). Other studies by Cummins, Gentle and Hull (2008) found that many teachers have the appropriate pedagogical skills and attitudes to embed Indigenous perspectives, but are hesitant to do so as they feel they lack the knowledge and expertise needed to do this effectively. Previous studies (Andersen & Walter, 2010; McRae, 2000, 2002) have identified three key elements for success in teaching and embedding Indigenous perspectives, namely cultural recognition and support, skill development and participation for individuals and the community. Clearly, these findings along with those of the Regional Aboriginal Education Team (RAET) report (Western NSW Region RAET, 2010) indicate that further research and professional development are needed to provide teachers with a wide range of methods to integrate Indigenous culture into their lessons.

In order to develop learning experiences which incorporate Indigenous culture, it is important to understand strategies Indigenous cultures used to facilitate learning. Some studies have identified Indigenous ways of learning (Donovan, 2007; Hughes, Khan & Matthews, 2007; Yunkaporta & McGinty, 2009) as being concrete and holistic, and learning in wholes rather than parts (Hughes

et al., 2007; Stairs, 1994). Studies conducted by Harris (1984) identified a number of learning preferences for Indigenous people including learning through performance, observation and imitation, learning by trial and error, learning about people rather than tasks or information, and connecting knowledge to the land. Many subsequent studies support this hands-on or kinaesthetic approach to learning for all students (Donovan, 2007; Flamsteed, 1999; Harris, 1990; Hughes et al., 2007; Robinson & Nichol, 1998; Stiffarm, 1998; Yunkaporta & McGinty, 2009).

When reflecting on Indigenous “ways of learning” it becomes apparent that hands-on kinaesthetic learning environments provided crucial support to improved learning outcomes for Indigenous children. The construction of hands on learning experiences for children demonstrates a pedagogical approach which caters for the diverse needs of the learners and promotes inclusive education in schools. The use of kinaesthetic learning experiences for all students to foster more inclusive educational practices has been supported by a number of research findings (Hyde, Carpenter, & Conway, 2014; Lengel & Kuczala, 2010; Ratey, 2008).

As the need to embed Indigenous perspectives grows within our educational institutions (Queensland Government, 2011), the practicalities of achieving effective learning experiences have not yet emerged. The onus has been placed on classroom teachers to develop and provide opportunities for children to learn about Indigenous culture in order to recognise Indigenous perspectives and foster respect for Indigenous peoples and knowledges (Australian National Curriculum Board, 2009).

#### *Connecting Indigenous perspectives to TIG*

TIG are unique to Australian and Torres Strait Island culture, and as such create opportunities for all children to participate, understand, recognise and celebrate Indigenous culture. The

cooperative nature and hands-on kinaesthetic learning experiences playing TIG provides for participants, along with the supportive and collaborative way in which they can be taught, would not only assist teachers to embed Indigenous perspectives in a non-threatening way, but allow for truly inclusive pedagogy in the classroom. Indeed, providing a wide range of learning experiences which promote student participation and engagement is a core ingredient for inclusive education in schools (Hyde, 2014). The differentiation that is present in TIG occurs through student self-monitoring, and ensures all students are involved, experience success, and yet are still challenged to improve their performance. By involving all students in this way, TIG can cater for diverse learning needs and cultures and promote skill development and participation in physical activity. Playing TIG would also deepen students' understanding of Indigenous culture by situating the games in context and acknowledging the purpose and intent for each game.

The study this paper is based on explored TIG as a vehicle to embed Indigenous perspectives and develop integrated units of work across multiple key learning areas. Since TIG promotes inclusion and cooperation, it was theorised that an intervention program which foregrounded professional development for teachers would enable teachers to develop the knowledge, skills and dispositions to foster student personal development and social skills, which are necessary for cultural awareness.

The intervention program was designed to provide professional development in stages to allow for further adaptation and refinement for each specific school and class context involved in the research. Thomas (2005) discussed the idea that ongoing professional development provided a mechanism both for individual teachers to improve their practice and for entire schools to implement reform, and this view was reflected in the aims of the intervention program. Research

conducted by Ary, Jacobs, and Sorensen (2010) identified the importance of generating a collaborative support network for the participants within a professional development program to enhance the effectiveness of such a program. O'Toole and Beckett (2010) found that successful professional development programs were context specific, so that participants were given the opportunity to relate what they had learnt to their own context. Other studies into effective professional development programs found that intervention programs helped to provide a focus for staff to implement what they had learnt in the professional development sessions.

Consideration was given to the findings of these studies when the professional development program was constructed for this study. The professional development sessions within the intervention were conducted with a focus on communication, support and cooperation, where the spirit and intent of TIG were task orientated and team members had to cooperate with each other in order to achieve success. By establishing a sense of cooperation and skill mastery when participating in TIG, as opposed to competitive games, which often create winners and losers, a more supportive team environment was generated. The TIG intervention program was geared towards inclusion, cooperation and developing positive relationships so that teachers connected these ideas with Indigenous culture and were able to implement TIG effectively with their students as a result of their "lived experiences" in the TIG professional development.

The professional development program continued over a period of six months to allow teachers the opportunity to obtain ongoing support as their confidence and knowledge base grew. The program provided individualised support, allowed for a broader knowledge base to be built within each school over time, and gave teachers the opportunity to practice what they had learnt and to reflect on the outcomes. The sustainability of the intervention program was further enhanced through the individualised and ongoing model of professional development as it

identified the diverse needs of teachers involved in the intervention program and specifically targeted their needs.

## **Methodology**

The intervention program used TIG from the Yulunga resource (Edwards, 2004) as a focal point to facilitate knowledge and understanding of TIG. Seven teachers of Year 5 students from 5 schools within the Fraser Coast district of Queensland, Australia, took part in the study. The participants attended professional development sessions prior to and throughout the six month intervention program. During the six month intervention period, fortnightly visits with each teacher in their schools were conducted, as well as phone and email contact as required.

Data were collected in the form of teacher surveys and interviews both pre and post intervention. The survey instrument identified obstacles and measured participation, teacher perceptions, attitudes and confidence to embed Indigenous perspectives in the learning experiences they constructed for their students. The teacher survey used two response formats; closed scale and a five-point Likert scale. The closed scale was used to identify time, type and barriers to embedding Indigenous perspectives, where respondents selected the response that best described their context. The five-point Likert scale was used to measure perceptions and attitudes of teachers (degrees of liking), knowledge and skills (perceived amount), and confidence (how they felt). The teacher interviews unpacked issues and obstacles identified in the survey, to provide rich description to help explain the teachers' survey responses.

## **Results**

During the interviews prior to the intervention, all teachers from the trial schools acknowledged their own lack of knowledge and understanding as the most common obstacle to embedding

Indigenous perspectives in their classrooms. Post intervention, only 57% of teachers felt their lack of knowledge was an obstacle to embedding Indigenous perspectives within their classroom. Other factors were also identified as obstacles: not wanting to cause offence, ignorance and prejudice of others, and lack of resources, which all decreased quite markedly at post intervention, except for ‘not wanting to cause offence’ which remained relatively constant across the intervention period. The results are demonstrated in Table 1.

Table 1. Obstacles to Embedding Indigenous Perspectives

	Pre intervention		Post intervention	
Obstacles	N = 7	%	N = 7	%
Lack of knowledge and understanding	7	100	4	57
Not wanting to cause offence	4	57	4	57
Ignorance and prejudice of others	3	43	1	14
Lack of resources	1	14	0	0

When teachers were asked to identify how much *time* was spent each day embedding Indigenous perspectives, prior to the intervention, 29% of respondents spent more than 10 minutes each day incorporating Indigenous perspectives in their learning experiences. At the end of the



intervention, approximately 57% of teachers spent more than 10 minutes each day providing Indigenous perspectives in their learning experiences.

When teachers were asked for their perceptions of their students' enjoyment in learning about Indigenous perspectives, their responses prior to the intervention were that 14% of students liked or loved the sessions. Post intervention, teachers commented that 100% of their students liked or loved learning about Indigenous perspectives.

When teachers were asked if they enjoyed embedding Indigenous perspectives into their learning programs, their responses prior to the interventions were that 57% liked or loved embedding Indigenous perspectives into their learning programs. Post intervention, 86% of teachers liked or loved embedding Indigenous perspectives into their learning programs.

When teachers were asked how confident they felt embedding Indigenous perspectives into their daily programs with their students, their responses prior to the interventions were that 57% felt they were ok about embedding Indigenous perspectives into their learning programs. Post intervention, 86% of teachers felt they were ok, confident, or very confident embedding Indigenous perspectives into their learning programs. Table 2 presents the results for time spent each day embedding Indigenous perspectives in learning experiences Pre-Post; teachers' perceptions of their students' enjoyment of learning about Indigenous perspectives; teachers' enjoyment of embedding Indigenous perspectives into their learning programs; and teachers' confidence to embed Indigenous perspectives into their learning programs.

Table 2. Teachers' Responses to Embedding Indigenous Perspectives

Characteristic	Pre intervention		Post intervention	
	(N=7)		(N=7)	
	<i>n</i>	%	<i>n</i>	%
<b><i>Time</i></b>				
0-10 mins	5	71	3	43
11-20 mins	2	29	3	43
21-30 mins	0	0	1	14
<b><i>Perception of student enjoyment</i></b>				
Indifferent	6	86	0	0
Like	1	14	6	86
Love	0	0	1	14
<b><i>Teacher enjoyment</i></b>				
Dislike	0	0	0	0
Indifferent	3	43	1	14
Like	4	57	5	72
Love	0	0	1	14
<b><i>Teacher Confidence</i></b>				
Not confident	1	14	0	0
A little hesitant	2	29	1	14
OK	4	57	3	43
Confident	0	0	2	29
Very confident	0	0	1	14

## **Discussion**

Aboriginal and Torres Strait Islander histories and cultures are a Cross Curriculum Priority within the Australian National Curriculum. Specifically, all students should be provided with the opportunity to gain a deeper knowledge of Australian Indigenous cultures, through the development of considered and focused content that fits naturally within learning areas (ACARA, 2012). Prior to the TIG intervention program teachers identified a lack of knowledge and understanding of Indigenous issues, along with a lack of confidence to address Indigenous issues as their main barriers to embedding Indigenous perspectives in their classroom learning experiences.

Teachers who participated in the TIG intervention program felt playing TIG with their students gave them more opportunities to discuss Indigenous culture and issues with their class. Teachers reported greater confidence, knowledge and understanding of Indigenous culture and issues, as a result of the TIG intervention program. Teachers also felt this enabled them to embed Indigenous perspectives more readily in the learning experiences they planned for their class.

A study by McAuley (1985) explored participants confidence in learning tasks and found as confidence grew, performance was enhanced which led to greater success at the given tasks. The influence of this upward spiral of confidence, performance and success is evident in the teachers who participated in the TIG intervention program, since as teachers' confidence grew, so too did the amount and type of learning experiences they developed which articulated and demonstrated Indigenous perspectives.

The success teachers experienced embedding Indigenous perspectives through playing TIG may have assisted them to build on, and continue to look for, further ways to include Indigenous

cultures and histories in the learning experiences they planned for their students. Since the data demonstrated that this was indeed the case, then playing TIG in class acted as a catalyst for teachers to address national curriculum requirements relating to embedding Indigenous perspectives as a cross-curriculum priority.

## **Conclusion**

The TIG intervention program provided professional development for teachers to assist them to meet key national curriculum deliverables around embedding Indigenous perspectives. This study identified difficulties teachers faced embedding Indigenous perspectives and was developed in an attempt to solve some of the problems teachers faced implementing Australian National Curriculum requirements relating to embedding Indigenous perspectives. These teachers reported the main barriers as being time and curriculum demands, coupled with a lack of specialist knowledge in Indigenous perspectives.

The professional development model followed within this study provided teachers with a wider knowledge base to plan comprehensive learning experiences for their students. Further, the model for the TIG professional development used in this study built teacher confidence and capacity to embed Indigenous perspectives.

The findings from this study have lead to five key recommendations for the implementation of successful professional development programs which relate to embedding Indigenous perspectives, but can be adapted for wider use when creating and implementing professional development programs. Firstly, that professional development programs provide ongoing support to participants over a sustained period of time. Secondly, that the learning experiences within the professional development program are context specific and are modified and adapted to suit the

specific needs and contexts of the participants. Thirdly, the methods used in facilitating the professional development must also demonstrate and focus on the strategies which incorporate Indigenous ways of learning. Fourthly, professional development which demonstrates and actively promotes inclusion and the sharing of ideas fosters the notion amongst participants and facilitators that “we are in this together” and generates ongoing collaboration and problem solving amongst participants. Lastly, in the light of the success of this study, it is pertinent for TIG to be considered as a way to integrate the requirements of the National Curriculum relating to embedding Indigenous perspectives, into a more manageable, time efficient and enjoyable learning experience for teachers and students. Further research around ways to support teachers to meet the key deliverables of the National Curriculum is needed so that the specific learning outcomes identified within the National Curriculum for Australian school children becomes achievable.

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# **Using video to promote pre-service teachers' thinking about their transition to teaching**

Dr Michelle Ludecke

## **Abstract**

This paper reports on research investigating the use of video representations of first-year teachers' experiences in undergraduate teacher education workshops that focus on the transition to teaching. The use of the video is a responsive act that draws on the notion of looking back, where graduates in their first year of teaching 'speak to' current students. Scenes from video footage of the theatre-based research performance *The First Time* shaped workshop activities and discussions in the unit. Themes ranged from pedagogical to practical, covering topics such as teacher identity discourses; epiphanic and revelatory moments of transition to becoming a teacher; and preparing for job applications and interviews. Data from the researcher's journal, Student Evaluation of Teaching and Units (SETU) comments, and semi-structured interviews with undergraduate students upon completion of the workshops are framed within a phenomenographic paradigm. The aim in phenomenography is to describe variations of conception that people have of a particular phenomenon (Sin, 2010), in this case the video as a tool to promote critical thinking about the transition to teaching. The researcher explored her own, and participants' experiences, and identified a range of conceptual meanings of the phenomenon. These were classified into categories according to their similarities and differences concerning the effectiveness of this specific video in assisting undergraduates in their transition to teaching. Early results reveal some similarities and many variations among participants as to the effectiveness of the video as a tool. Their conceptions of the phenomenon are individual and relational, and as such are quite varied. Emergent varied themes include: 'I know what it is that I need to learn'; 'Is this theory or practice?'; and 'I don't do drama'. Emergent similarities include: 'Preparing for the unexpected'.

## **Rationale**

This year's conference themes raised some considerations for me with regard to my practice as a teacher educator. Working in the area of curriculum and pedagogy I often teach pre-service

teachers who value their method subjects at university and their practicum experiences over these subjects. It is disappointing, but not wholly surprising, that the disconnect between the campus and school-based components of programs (Zeichner, 2010) still exists. Yet I persist in my attempt to assist pre-service teachers to recognise the importance of reflecting on their emerging teacher identity in relation to the graduate attributes they will bring to the profession. In doing so a few years ago I undertook an audit of what I had previously taught a particular group of pre-service teachers, then followed their progress into their first year of teaching. This research formed part of my doctorate. I then fed back these stories into my existing program, through the use of videos that focussed on the transition to teaching. In this current research in progress investigation it was my intention to disrupt the taken-for-granted in order to provide fresh insight into familiar problems (Shann, Germantse, Pittard, & Cunneen, 2014). The use of the video as an innovative and responsive act draws on the notion of looking back, where the graduates in their first year of teaching ‘speak to’ current pre-service teachers. The preparation of the video came about through seeking a sustainable method of re-presenting my theatre-based research performance ‘The First Time’: a non-naturalistic dramatic representation by teacher-actors of the de-identified interview data from twelve first-year teachers in Victorian schools.

## **Background**

Looking back over my years in teacher education, and more particularly teaching 4th year undergraduate subjects concerning the transition to teaching, responses from pre-service teachers that have actively taken part in my seminars show that they find the material relevant and engaging. However, I acknowledge that it is far easier to engage those who are already prepared to be engaged! My concern was, and is, for the pre-service teachers who elect not to attend seminars based on their previous experiences of *“too much theory that is not relevant to my*

*teaching*". While the participants in my doctorate research fell into the former category, I deliberated on how I might use their understandings of their transition to teaching to engage the latter. The video footage of my theatre-based research performance 'The First Time' shaped the seminar workshop activities and discussions in the unit. Themes ranged from pedagogical to practical including: teacher identity discourses; epiphanic and revelatory moments of transition to becoming a teacher; and preparing for job applications and interviews.

## **Method**

Data was derived from multiple sources including my own reflective journal, Student Evaluation of Teaching and Units (SETU) comments and Likert scale data, and semi-structured interviews with undergraduate pre-service teachers upon completion of the seminars and their degree (HEAG Project number 2013-248). My reflective journal noted my own perceptions of what pre-service teachers seemed to find engaging, and I documented some of their comments on the relevance of the topics. This data was analysed first within and then across three seminar groups. The SETU data that was made available at the completion of the unit was then analysed against my own data, identifying similarities and differences between my own perceptions and the pre-service teachers' feedback. While both data sets on their own are highly subjective, in conjunction they allowed me to identify areas for further discussion in preparation for the interviews with research participants. Participants from across the three seminar groups were invited to participate in semi-structured interviews of up to an hour, to 'reflect back to the series of workshops in your final semester of teacher education that employed scenes from 'The First Time'...you are invited to use your notes/reflective journal from [subject code] to assist you to recall the workshops'. The participants were interviewed between November 2013 and February 2014 and ranged in their experiences of transitioning to teaching from employed in ongoing

positions to actively seeking but yet to find permanent employment. All of the participants attended at least 8 of the 10 seminars.

The interviews centred on gleaning the participants' perceptions of the effectiveness of the specific video as a tool to stimulate discussion in the seminars of the themes raised in each scenario. These were:

Week 1: Prologue - Looking back

*Looking forward: Write an email to [your tutor] as though you're at the end of your first term of in-service teaching.*

Week 2: Janet - 'Just a grad'

*Critical thinking regarding job applications and interviews*

Week 4: Maggie

*What do you know about students as learners; yourself as a teacher; the teaching profession?*

*Try to think past 'getting a job' towards 'doing the job.'*

Week 5: What do Sari & Beth know about students as learners?

Week 6: Lara – discoveries & epiphanies

*What has Lara discovered about herself as a teacher?*

*What discoveries have you made about yourself as a teacher?*

Week 7: Amelia - Mock interview preparation

*What has Amelia discovered about her transition to teaching?*

*Have you made a similar transition?*

Week 8: Tash - Theorising our work

*What has Tash learnt about the kinds of support available to her?*

*How has it shaped your current practice?*

Week 9: Lachy - The first day

*What did Lachy learn about planning for the first day?*

*What are the tools of your practice? How do you access these?*

Week 10: Sandra - Metaphors

*What metaphors do you have about your teaching?*

*How might you explore and present your metaphor/s in an ePortfolio (and in an application & job interview)?*

Week 11: Sebastian, Richard, Cassidy

*What can we expect in the transition to in-service teaching? An emotional and physically demanding time – looking after yourself.*

Interview prompts included:

- What do you recall most about the tutorials?
- Select/organise the AITSL Standards (hands on task) into a hierarchy of most to least relevant to your most recalled moment.
- Which aspect of ‘The First Time’ most resonated with you? Discuss.

- What's your opinion on using a tool such as 'The First Time' in university seminars?
- Do you enjoy role-play in seminars? Does it help?
- Would you include aspects of drama in your teaching?

The data was analysed within a phenomenographic paradigm in order to describe variations of conception that people have of a particular phenomenon. Within a phenomenographic paradigm the set of categories or meanings derived from participants' descriptions to frame the analysis of experiences are not determined in advance, but 'emerge' from the data (Åkerlind, 2012; Marton, 1981; Ornek, 2008). Phenomenography seeks a description of experiences that highlight notions of identity. In this way I sought to describe, analyse, and understand (Marton, 1981) the qualitatively different experiences the participants had in the seminars, and how their experiences assisted them to understand their own shifting teacher identity. Phenomenography investigates qualitatively different ways in which people experience something or think about something. Both phenomenographic and phenomenologic approaches share the importance of a description of the meaning of the expressions of lived experience – an intermediate (or mediated) description of the lifeworld as expressed in symbolic form. When description is thus mediated by expression then description seems to contain a stronger element of interpretation (van Manen, 1990, p. 25). Both phenomenographic and phenomenologic approaches share an understanding that each approach to research is 'a poeticising activity' (van Manen, 1984, p. 2). The focus of eliciting responses from individual participants is not primarily to be able to 'report' on how the phenomenon is seen from their particular perspective, but to ask the question of what is the nature of this phenomenon as an essentially human experience. How is this a transition to beginning teaching? Is this what the beginning teaching experience is like? The analysis seeks to identify categories that are stable and generalisable between individual situations even if

individuals move between categories on different occasions. The participants' data was classified into categories according to their similarities and differences.

## **Results**

The early results of the research have been categorised into similarities and differences among the following:

### *The use of video as a tool to prompt discussion of themes raised*

All participants reported that the video was an effective tool to promote discussion around the themes raised in each scene. The similarities revealed themes including: Preparing for the unexpected; I'm not expected to know everything, like what the characters were expecting and what actually happened...now I know what it is I need to learn; Helpful in addressing prospective 'fears' and 'anxieties'; Better as a non-naturalistic performance/video; Attractive to visual learning styles; Example/s rather than 'just theory'; and Provided a weekly routine/structure to the workshops.

The most similarities concerned the scenes and subsequent workshops about 'Janet' and 'Amelia'. Participants' responses included: *"job interviews I liked that... I was a lot more nervous – like it was a real interview - but I think that's a good thing as well because I think that prepares you more ... and then we had the opportunity to listen to other people as well."* *"Oh yeah, I love those practical things...I hadn't thought about interviews at all at that point...so it was good."* *"I think it was really good because it got me thinking about questions that haven't really come up in the interview but have also helped me in my application."* Whether the participants were actively seeking employment or had yet to begin the process, all participants appreciated the opportunity to hear about and discuss with each other how they would position



themselves as a graduate teacher. ‘Janet’, who felt as though she had little to bring to an application or interviews based on her limited professional experiences, highlighted their concerns. This led to a valuable discussion regarding positioning through selected discourses, and avoiding the deficit discourse of ‘just a grad’. One workshop activity involved a role-play bringing together the experiences of ‘Janet’ and ‘Amelia’ making the transition from pre-service to in-service teacher. The role-play involved selecting from a list of potential interview questions regarding teacher identity, philosophy, and becoming a teacher. Participants alternated between asking and responding to pre-selected questions in small groups, then discussed each response with regard to refinements they could make.

#### *Use of drama/role-play in seminars*

*“That was really useful. For situations like that yes – I don’t like the big drama things where you feel really stupid – I’ve been to PD days where you have to do laughter yoga where you go around laughing in everyone’s faces, and everyone was going around rolling their eyes...stuff like that I don’t think does anything. I don’t benefit from it. But the interviews – definitely 100%...it was a way to speak your answers rather than say it in your head, and that’s such a big thing”*

I’m very aware that, unlike myself, many pre-service teachers have an aversion to doing role-play to assist their learning. I try to create non-threatening and authentic opportunities to enact practice in my seminars, and achieve this by avoiding participants ‘performing’ to the whole group, and relating the activity to the participants’ lives. When asked more generally about the use of role-play in seminars all but one participant expressed hesitation at the perceived value. The difference was that the one participant loves role-play due to her drama background and teaching method. The similarities among these research participants with regard to the use of

role-play in the seminars were that the job interview role-play in particular was valuable as it was more like a ‘rehearsal’ for prospective experiences. Another activity that I posed as a characterisation task, where participants had to imagine themselves writing to me at the end of their first term of in-service teaching, was a spectacular failure! All participants first avoided discussing this activity, and then when prompted further, agreed that it was their least favourite. I feel as though this was perhaps too distant from their current experiences, and that they had too many milestones ahead of them that were of immediate concern, to allow them to think about and visualise something more than six months into the future. I’m subsequently refining this activity to align more with the notion of looking back in order to identify the shifts in identity that have occurred to date, with the purpose of acknowledging that identity continues to be a fluid concept, and to address some of the questions I received during the seminars, asking “*Is this theory or practice?*”

#### *Specific scenes recalled as beneficial*

All participants commented on the following scenes and subsequent workshops as beneficial to their understanding of their identity and the transitional period from pre-service to in-service teacher they were undertaking. ‘Lachy’ was a standout as many participants could relate to his struggle with accessing the basic tools of the profession from their pre-service teaching experiences. I recently visited a current pre-service teacher on her practicum and she was so excited that she’d been given a key to the office and classroom, it reminded me how taken for granted some of these seemingly minor artefacts can appear be. As mentioned earlier ‘Amelia’ and ‘Janet’ were similarly popular, particularly in relation to the subsequent workshops. Other notable similarities included ‘Maggie’ with regards to the preparation for the first day; ‘Sari’ in relation to managing challenging behaviour; ‘Beth’ and her disjunction between her perception

and the reality of her introduction to in-service teaching; and ‘Sebastian’ who prompted further consideration of the rhythm of teaching including the physical and emotional variations he encountered. The participants’ responses differed in relation to recalling as valuable ‘Lara’ and ‘Sandra’. Only one participant mentioned ‘Lara’ as less relevant to her as a secondary teacher, having a distinct primary focus. She felt it was difficult to see past the concept of lunchboxes, to the workshop purpose of noticing epiphanic moments as an indication of identity transformation. Another participant found the process of developing a teaching metaphor beneficial, which differed to the remaining participants who were “*a bit over all that*”. None of the participants mentioned ‘Cassidy’, ‘Richard’ and ‘Tash’ as particularly noteworthy.

#### *The use of drama/role play in own teaching*

Having used elements of drama in our own seminars through the use of the video and role-play activities, I asked the participants whether they had or would consider using such strategies in their current or prospective practice when not specifically for drama. Similarities included the repetition of the phrase “*I’ve used it once...*” This is interesting to me as the unspoken implication is that it was unsuccessful, and therefore not tried again. Science seems to be a popular subject for many to employ role-play (if only once!), particularly in enacting chemical reactions. Different responses were given as to why participants had not continued to consider role-play in their teaching. These included lack of time, expertise, and perceived relevance to the topic. One participant mentioned “*I understand that people are nervous about role-play...I don’t want to make it about the acting*”. Some participants’ previous (mostly negative) experiences with role-play also impacted on their willingness to attempt to include it further, stating “*I don’t do drama*”. In subsequent seminars I have downplayed the ‘acting’ aspect by avoiding using dramatic terms. I recently ran the interview workshop activity again, without calling it a role-

play, and responses were far more positive when we discussed how an activity such as this could be used in the pre-service teachers' prospective practice.

### **Australian Institute for Teaching and School Leadership (AITSL) Professional Standards addressed**

During the interview I asked participants to consider their most memorable scene and link it to the AITSL Standards (Graduate). I cut out the Standards, Focus Areas and Descriptors<sup>2</sup> and asked the participants to arrange the pieces hierarchically from most to least relevant to their memorable scene. A variety of scenes were selected as memorable, as indicated earlier, so the similarities and differences in this analysis centred on the Standards themselves. Similarities were resoundingly Standard 6: Engage in professional learning, and more particularly Focus Area 6.1: Identify and plan professional learning needs, Focus Area 6.3: Engage with colleagues and improve practice, and Focus Area 6.4: Apply professional learning and improve student learning. Differences included: Standard 7: Engage professionally with colleagues, parents/carers and the community; and Standard 4: Create and maintain supportive and safe learning environments. The analysis of this aspect of the research is currently being undertaken with the view to investigating how pre-service teachers make the connection not only between theory and practice, but also how they connect their understanding of their own identity to the graduate attributes they will bring to the profession.

### **Where to now?**

As I continue to analyse the experiences of the participants in this research I do so with the aim of articulating the benefits I have found in using the actual experiences of beginning teachers to

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<sup>2</sup><http://www.aitsl.edu.au/australian-professional-standards-for-teachers/standards/overview/organisation-of-the-standards>

assist pre-service teachers to reflect on their practice and identity. I have toyed with using alternate methods such as reading/enactment of the play script, descriptions and enactment of the scenarios, and listening to the interview audio. When asked the hypothetical question ‘What do you feel would be an effective method...?’ all participants reported that the video would be better. This is to be expected, as we never tried the other methods. However, most participants said that ‘The First Time’ was more relevant than other teaching-related movies and documentaries they had viewed as part of their teacher education. Their responses highlighted the relevance of the ‘reality’ of the content – even though the way the material was shaped was non-naturalistic. In fact most reported that the non-naturalistic representation assisted them to see both the ‘past’ and the ‘present’ of each teacher’s experiences. Their responses, while varied, all concluded with the acknowledgement that the video as a tool for reflection assisted them in “*preparing for the unexpected*” by encouraging them to consider to “*know what it is that I need to learn*”.

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**Becoming, belonging and being in the profession: Evaluating a mentoring program for  
Aboriginal and Torres Strait Islander initial teacher educators**

Elizabeth Mackinlay, Katelyn Barney and Susan Creagh

**Introduction**

Various described as professional friendship, an intense work relationship and a process of growth and change, mentoring is a supportive learning environment characterised by the exchange of professional beliefs, knowledge, experience, and wisdom between a mentor and mentee so as to assist and promote the career development of the mentee. While there is a growing body of scholarly work on “mentoring in black and white” (Johnson-Bailey & Cervero, 2004), many of these studies have focussed on Indigenous mentoring programs across a range of professional areas (Everard, 2012; Susskind, 2012), have been based outside of Australia (e.g. Davidson & Foster-Johnson, 2001; Hewett, Fraser, Burgess & Ohia, 2007; Johnson-Bailey & Cervero, 2004; Terrell & Hassell, 1994), have focussed on mentoring programs for non-Indigenous pre-service teachers to improve Indigenous educational outcomes (Dole, McCluskey, O’Brien & Mackinlay, 2012), have turned attention to mentoring experiences to improve the educational pathways of Indigenous secondary students (Australian Indigenous Mentoring Experience Corporation, 2013; Koerner & Harris, 2007; MacCallum, Beltman & Palmer, 2005), and/or have explored Aboriginal and Torres Strait Islander tertiary students’ experiences of mentoring outside of the field of education (Thomas, Milroy & Bartlett, 2010).

In this paper, we build upon existing work in the field by exploring the experience and effectiveness of cross-cultural mentoring programs for Aboriginal and Torres Strait Islander pre-service teachers. Recognising that “mentoring across cultural boundaries is an especially delicate dance” (Johnson-Bailey & Cervero, 2004, p. 7) which takes place on the boundaries between

race, gender, class, learning and power, this project adopts a critically reflective (Harrison, Lawson & Wortley, 2005) and strength-based (He, 2009) approach to enable understanding of the socially, culturally and politically complex conditions in which the learning and acquisition of professional knowledge about teaching takes place, and further, pays attention to the development of self-efficacy and resilience for Indigenous pre-service teachers. Underlying this paper then, is a critical pedagogy and transformative learning agenda which seeks to put in place educational processes which encourage the Freirean concept of *praxis*, that is, the on-going interaction of reflection, dialogue and action in order to “illuminate” human activity and “provide a better understanding of the world as we find it and as it might be” (Darder, Baltodano & Torres, 2009, p. 13).

Today we would like to first provide an understanding of the national priorities in Indigenous Australian education and teacher education guiding and driving our project, and then discuss in more detail the current research we are undertaking. We focus on the interviews we undertook with four Indigenous students before they began the mentoring program to gain a sense of their motivations in relation to *becoming* a teacher. The data is presented as a fictional conversation which might have taken place between them. In doing so, we aim to present an individual and collective story about Aboriginal and Torres Strait Islander initial teacher education students’ *becoming* professional identities as teachers and their expectations of the ways in which a mentoring program might enhance their readiness to teach.

### **The National Context and Background**

The recruitment, retention and graduation of more Aboriginal and Torres Strait Islander teachers is a key focus of the national and federally funded More Aboriginal and Torres Strait Islander Teachers Initiative (MATSITE, 2012). The MATSITE project is aligned with the COAG *National*



*Indigenous reform agreement* and associated *Closing the gap on Indigenous disadvantage: The challenge for Australia* (Department of Families, Housing, Community Services and Indigenous Affairs, 2009) reforms. The graduation of more Aboriginal and Torres Strait Islander teachers and the increased placement of Indigenous teachers in Australian classrooms is seen as an integral factor to improving the educational outcomes for Aboriginal and Torres Strait Islander students across early childhood, primary and secondary schooling contexts (Mellor & Corrigan, 2004; MCEECDYA, n.d.). The School of Education at the University of Queensland, in collaboration with the Office of the Pro-Vice Chancellor Indigenous Education, has entered into a partnership with MATSITI to put in place positive strategies to improve the preparedness and resilience of Aboriginal and Torres Strait Islander people to undertake study and employment in teaching. The mentoring program we are discussing today represents first steps towards fulfilling that agreement.

Currently, the enrolment of Aboriginal and Torres Strait Islander pre-service teachers across all education programs (primary, secondary and middle-years) at the University of Queensland is approximately 1.2%, which is well below the national average of 1.99%. Funded jointly by MATSITI and the Office of Learning and Teaching, the aim of our current research is to evaluate the use and effectiveness of a mentoring program as a positive intervention for building and sustaining Aboriginal and Torres Strait Islander initial teacher education students' participation in tertiary education programs, their self-efficacy as teachers, their professional identity as teachers, and their readiness to teach. The project hopes to make a positive and practical contribution to the central goals of MATSITI regarding retention and graduation of Aboriginal and Torres Strait Islander initial teacher education students' by increasing the research base that draws attention to effective strategies that higher education settings can implement. Importantly,

the proposed project responds to the following recommendations from the *Review of Higher Education access and outcomes for Aboriginal and Torres Strait Islander people: Final report* (Behrendt, Larkin, Griew & Kelly, 2012):

Recommendation 10: “*That universities adopt a whole-of-university approach to Aboriginal and Torres Strait Islander student success so that faculties ... have primary responsibility for supporting Aboriginal and Torres Strait Islander students*” (Behrendt, Larkin, Griew & Kelly, 2012, p. xix), and,

Recommendation 11: “*That universities ... ensure quality student outcomes (for Aboriginal and Torres Strait Islander students) with a focus on ... improvements in retention and completion rates*” (Behrendt, Larkin, Griew & Kelly, 2012, p. xx).

In addition to this the project is taking up MATSITI’s recommendations to target improvements in the ways that cultural understanding and safety is fostered during the professional practice experiences of initial teacher educators’ (Patton et al., 2012, p. 36).

### **About “Becoming, being and belonging”**

Our “Becoming, being and belonging” mentoring program began in July 2013. Working closely with a reference group of Indigenous and non-Indigenous teachers, we have entered into research partnerships with two local schools – one primary and one high school - in the southwest region of Brisbane which fall within the University of Queensland’s recruitment cluster. Both schools have strong and on-going practical and research relationships with the School of Education at UQ and demonstrate a strong commitment to current Indigenous education agendas in their classrooms, curricula and school communities. As already mentioned, our Indigenous student numbers across all education programmes at UQ are small and so too are the numbers involved in the mentoring program - we currently have two primary and three secondary students

participating. The participation of teachers in the program has been instigated and managed by the Principal and Deputy Principal in each school. Teachers considered by them to be at the 'top of the game', excellent educators and with an interest in working in the field of Indigenous and diversity education have been identified and invited to take part. In conversation with the research team, we have then worked to 'match' potential mentor-teachers with Indigenous student mentees based on program orientation and academic interests as well as other factors such as age and gender.

The program itself has been developed through a relational approach whereby participation of teachers and Indigenous students begins through involvement in a mentoring professional development day. The aim of the PD is to provide a space for 'relationship' across a number of areas to happen: for teachers-as-mentors and Indigenous students-as-mentees to meet, talk and get to know one another; to listen to the voices and experiences of Indigenous educators in relation to what the experience of becoming, being and belonging in the teaching profession is like; to share previous experiences and understandings of mentoring; to engage in cultural awareness training with a specific focus on education, teaching and learning; and, to work together to develop and map out what the mentoring program will look like. Once teacher-mentors and student-mentees have completed the PD day, they are then ready to start their mentoring work in schools together. The mentoring takes place during term time over an 8-week period. Indigenous students visit their mentor-teachers once a week at school during or outside class time and work through the focus questions, issues, and concerns identified through the PD day as central to becoming and being a teacher.

Our research is qualitative, phenomenological and narrative based in that it is framed around mentoring as an experience and the telling of that experience through personal and collective

storying. Data collection so far has included development and evaluation of the PD day, pre- and post-program individual interviews with Indigenous students and mentor-teachers, and weekly reflective audio diaries completed by both during the 8-week mentoring program. Today, we would like to present a preliminary analysis of the ways in which Indigenous students storied their motivations for *becoming* a teacher and their hopes for the ways in which the mentoring program might contribute to achieving that aim.

Let me introduce you to Angus, who is currently enrolled in his third year of the Bachelor of Education Primary program at UQ. Angus is from Far North Queensland and comes from a long line of Indigenous educators – his grandmother was a teacher and his mother is a teacher. He enjoys being in schools and finding ways to maintain positive relationships with everyone in the school and the community – students, parents and teachers alike – form part of his motivations for becoming a teacher. Like Angus, Tania is from North Queensland and is straight out of high school. Not always her first choice, after having a gap year she decided to change her direction completely realising that she could make a big difference by being a teacher. Katrina is from New South Wales, Bundjalung country. Katrina has a ‘lot of tutoring, babysitting, and nannying’ experience and has always been told that she’s ‘actually really good at teaching kids’ which is why she thought that studying to be a secondary teacher was probably ‘worth a shot’. Meet Tony, a mature aged primary education student from New South Wales whose history and experiences of schooling involve time in foster care and juvenile detention centres. After completing a Bachelor of Arts degree at UQ, Tony travelled to South East Asia where he taught English and this is where he developed a love of teaching.

Let's imagine that Alec, Tania, Katrina and Tony are chatting together before going out to their mentoring session for that week. They are talking about why they made the decision to enrol in a teaching degree. The conversation goes something like this.

*"I did sports science and physiotherapy last year but it wasn't the thing for me. I'm a bit a more of a creative person, so that's why I decided to do education"*, begins Katrina.

Angus can relate to her experience, *"Teaching is something I always wanted to do as a back-up if I didn't have a successful performing arts degree and now that I'm almost half way through I've found that it's very rewarding in terms of seeing students learn and progress"*.

*"I just really want to be an English and drama teacher, even art if possible"*, explains Tania.

*"My schooling was very poor, although I was keen to learn"*, reflects Tony, *"The mathematics teacher used to hit me over the back of the hand with the same ruler all the time and I still bear the scars"*, he pauses. *"My love of learning comes from my history teacher"*. Everyone is quiet for a moment; Tony's story is a stark reminder of deficit ways of thinking about Indigenous learners which characterises much of the colonial history of Indigenous education.

*"I quite enjoy the challenges of teaching the kids"*, offers Katrina, breaking the silence.

*"[One of the challenges for me is] teaching in the correct manner and being able to impart the knowledge I'm learning here to a primary school [context]"*, Tony is thinking about the practicalities of being in a classroom. *"Giving the students a love of learning is very important because it's also about them as a person"*, he adds.

Angus agrees, *"Finding ways to motivate students who may not want to complete the work and trying to maintain positive relationships with everyone in the school and the community – students, parents and teachers alike – it's important. Relationship with the kids is important"*.

*“Not getting along with the students [is something I worry about]”, Tania says. “I know because I’ve been a student and I’ve seen how students often take out their problems on teachers. I guess [the challenge] is trying to engage my students in learning and stop them from getting distracted”.*

*“There’s a lot of challenges that pop-up with different learning types”, Katrina suggests. “That’s going to be a big challenge, to try and make sure that I’m not disadvantaging any of the different classes of students with the schools. You’ve got to cater for all of that and a lot of social justice issues as well”.*

*“In my school there were a lot of Indigenous students but the majority of them ended up dropping out in Grade 10,” Tania’s experiences mirror Katrina’s thinking around educational disadvantage. “There were only a few of us who did finish to Grade 12 and even fewer of us who were doing OP subjects”.*

*“There’s not many Indigenous teachers out there”, Tony makes a link between the low numbers of Indigenous students being in a position to undertake tertiary training and the small number of Indigenous teachers in schools.*

*“Trying to fit into the norm within the education system”, Tania reflects, “It’ll be difficult for me because I’m not white”.*

*“And I don’t look obviously Aboriginal, that’s a challenge in itself”, Tony admits.*

*“[I hope] it won’t really be an issue”, Tania adds, “I mean, I’m just as good as any other teacher”.*

Angus nods, *“Maybe I would be more of an influential character if I were to be placed in a remote school with a higher Indigenous population but I feel as though I can gain an adequate amount of respect being Indigenous or non-Indigenous”.*

*“I haven’t really been exposed to any challenges [as an Indigenous person] in my life at all so I don’t think I’ve comprehended that [being an Indigenous teacher] might be an issue or a problem – but I’m sure I’ll definitely get exposed to that, it will happen”, Katrina laughs.*

Tania agrees, *“[I think gaining] experience and insight into how being a teacher works, what the classroom looks like [will] give me a lot of confidence so that when I go on prac I’ll go in easy, no problems”.*

Angus likes the idea of being in the classroom, *“[I think I’ll really enjoy] seeing learning experiences in all different forms”.*

*“[Yes] to see a real teacher in a real setting, to see the interaction between the student and the teacher and vice versa as a body, and to see the sorts of things students are learning now will be good”, Tony suggests.*

*“I hope that I’ll be introduced to the school setting, welcomed [by my mentor teacher] and be able to become more comfortable in a school environment,” Katrina says. “[Being mentored] will be easier if they’re an easy-going person; to be able to give advice freely and a lot of feedback between us as well. That’s very important that we speak freely with the mentor relationship”.*

Tania’s thinking matches Katrina’s, *“I think there’s got to be trust on both sides. You’ve got to be able to express how you feel. As a mentee, if you’re not being completely honest with your mentor, then they’re not going to learn anything from it, and they’re not going to be able to help you. And mentor, if they’re not giving your mentee advice and you’re not being honest with how they’re doing, then they’re not going to learn anything from it. So I feel like it’s a two-way street”.*

*“Mentoring feels like it might be a safe environment for Indigenous students. I know that being Indigenous is not going to be an issue [at this school] and that takes a lot of pressure off,”* Katrina reflects, *“[It’s] a good way for me to have a good first experience of teaching and not be one of the fall outs because of the first bad prac”*.

*“A mentor needs to be someone who will try to understand the challenges that the mentee is facing”,* Angus suggests. *“Answering questions about anything regarding the classroom, asking and giving advice; [what I’m] just wanting is a [sharing of] experience and a broadening of knowledge”*.

*“[That’s true for the mentors too]”,* Katrina says. *“I think they could gain a lot of insight into my own personal experiences and background, learn about the issues that I’ve had to adjust to high school”*.

Tony nods, *“It’s an opportunity to explain about my background, my Indigenous background. Apart from that, I’m not sure I’ve got a lot to give a teacher with 20 or 30 years experience”*.

Tania laughs, *“I’m a lot younger and I guess maybe I can give some new ideas with technology – I’m a technology freak – [plus] I guess I’m just pretty fun!”*

*“So we’re all doing the mentoring for much the same reason – to get as much practical experience as possible that will help us in becoming a teacher”,* Angus attempts to summarise the main theme of the conversation.

*“Reaching a point where I’m a good teacher is what I’m aiming for and I hope that the mentoring program will give me some insight into what school is actually like”,* Katrina offers.

*“Gaining experience [is the main reason I wanted to do the mentoring program]. [When] I listened to the voicemail from Liz and Kate I was immediately interested and I was really*



*honoured. I really want to do this because I really want to be an Indigenous role model”,*  
Tania says passionately.

[*“Sounds like we’re all ready then”,* Angus says, reaching down to put pens and papers into his backpack. *“Let’s go and meet our mentor teachers and get some experience!”*]

## **Conclusion**

The higher education sector is being urged to close the gap in Indigenous education by actively putting in place strategies which will increase the number of Aboriginal and Torres Strait Islander teaching graduates and their preparedness to enter and stay in the teaching profession. Angus, Tania, Katrina and Tony’s motivations for becoming a teacher tell us that the reasons why Indigenous students might want to enter the teaching profession are varied and complex. Family histories, prior negative and positive experiences in education, and a desire to participate in the exciting, challenging and rewarding process of teaching and learning with children are all factors which have lead them to this point. All of them have a sense that their identity as Indigenous students matters in relation to becoming, being and belonging in the teaching profession – for them and for the teaching, student and educational community of which they will become a part. For now, they are not quite sure what their Indigeneity might mean in terms of the real life experience of being a real teacher in a real school. Their hope to become good teachers, and good Indigenous teachers, is what drives them and participating in the mentoring program is one step on this journey. They have now completed their first 8-week mentoring program and we are keen to speak with them again to find out more about their experiences. While we are very much still in the early stages of our research, our hope for this project is that it will contribute in a number of ways to teacher education research and our theoretical understanding of mentoring through, around and across the boundaries of race, the experiences

of mentors and mentees in a cross-cultural mentoring relationship, and the ways that mentoring is experienced by Aboriginal and Torres Strait Islander initial teacher education students' to develop their professional identities, self-efficacy and readiness to teach.

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# **Third space communities of practice for learning about teaching: Collaborative curriculum creation**

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## **Abstract**

The concept of third space enables the development of new initiatives and ways of working, and in teacher education, it offers possibilities for addressing the theory-practice nexus by enabling collaboration between pre-service teachers, teachers and teacher educators. In this paper I explore the establishment of a 'third space' partnership between a P-12 school and a regional university to foster a community of practice and provide learning opportunities for all involved. In this partnership pre-service teachers and teachers worked collaboratively on the development of new, integrated curriculum units in the area of sustainability. Drawing on qualitative data generated as part of a self-study during the implementation of the partnership, in this paper I explore the benefits and challenges of collaborative curriculum creation. I argue that through such communities of practice where pre-service and in-service teachers act as co-constructors of curriculum, greater understandings of the processes of curriculum development can be generated. In this community of practice, the identities of pre-service teachers, teachers and teacher educators are reconstructed as the community of practice develops.

## **Introduction**

In Australia and overseas there have been growing calls for closer relationships between schools and universities in developing strong and effective initial teacher education programs. In the Australian context, both state and federal governments have called for closer partnerships with schools to enable pre-service teachers to gain experience, see modeling of effective practice, and

to provide opportunities to integrate practice elements into initial teacher education programs (DEECD, 2011).

In overseas contexts, particularly America, the development of Professional Development Schools (PDS), which draw from a medical model of embedding clinical practice in teacher education, have proved successful in some contexts, where universities and schools work together to create ‘centres of educational excellence’ (Boyle-Baise & McIntyre, 2008, p. 313). Ronfeldt and Reininger (2012) contend that the ‘school settings in which student teaching takes place have a substantial influence on student teachers’ (p. 1093), and they critique the assumption that all practical experience is inherently valuable, arguing that school based experiences need to be carefully structured to avoid replication of the existing models of practice. The establishment of a third space for teacher education, provides a means of creating a space that draws together knowledge, skills and people from schools and universities to create opportunities for learning together.

In this paper I consider the ways the establishment of a third space partnership provided the opportunity for learning about teaching and curriculum development through establishing a community of practice. I examine the following research questions:

- 1) How does a community of practice for collaborative curriculum construction contribute to pre-service teacher learning?
- 2) What are the benefits and challenges of developing third space transformational partnerships for initial teacher education?

### **Third Spaces in Teacher Education**

The concept of third space has a background in cultural and literacy fields (Gutiérrez, 2008; Gutiérrez, Baquedano-López, & Tejeda, 1999), but for the purposes of teacher education, third space theory relates to the establishment of spaces for education that allow the creation of new ways of working and being. Zeichner (2010) contends that one of the central problems of teacher education is the ‘disconnect between the campus and school-based components of programs’ (p. 89) and he goes on to argue that in creating third spaces for education the possibility of boundary crossing and hybrid roles for teacher educators emerge. In third space partnerships, roles can be transformed with Klein, Taylor, Onore, Strom, and Abrams (2013) arguing that ‘the knowledge base for teaching is reconstructed’ (p. 28) in such contexts. Cuenca, Schmeichel, Butler, Dinkelman, and Nichols Jr. (2011) examine the transformative power of third space theory contending that it ‘creates opportunities to bring together practitioner and academic knowledge in new ways’ (p. 1069), arguing that it enables a focus on pedagogy and practice. In developing a third space for teacher education, a new community of practice can be generated as teachers, teacher educators and pre-service teachers work together. The concept of a community of practice is described by Lave and Wenger (1991) who argue that legitimate peripheral participation (LPP) provides beginners with the opportunity to learn from more experienced professionals in the field, and in this paper I explore the ways that in a third space partnership a community of practice was established as teachers and pre-service teachers worked together on a collaborative curriculum design project.

### **Transformational Partnerships**

In considering the development of a third space for teacher learning, the notion of transformational partnerships was a central consideration in the establishment of the space and relationship examined in this research. Butcher, Bezzina, and Moran (2011) contend that

transformational partnerships are those ‘with a moral dimension in which the partners come together to pursue common purpose and create the possibility of generative growth and change’ (p. 31). This concept of transformation differs from a transactional partnership where each party is concerned with the fulfillment of their own individual goals. Butcher, Bezzina, and Moran (2011) articulate five guiding principles for transformational partnerships: work out a shared purpose; lead collaboratively; relate on a basis of trust; ensure appropriate and adequate resources; and remain open to learning and change (p. 36). They contend that these five principles are the key to creating sustainable transformational partnerships between schools and universities that can make a difference to learning for all involved. In drawing on these characteristics, the partnership involved meetings with school staff to determine shared purposes and ways we could evaluate the project.

## **Context**

In 2013 I established a partnership between a P-12 school on the western peri-urban fringe of Melbourne, Victoria and a regional university. The partnership was designed as a third space for education, where I had a hybrid identity as a teacher in the school, teacher educator at the university and university mentor. An element of this partnership involved pre-service teachers from the university completing professional experience placements and being involved in a collaborative curriculum design project focused on integrating sustainability perspectives across the curriculum.

The goal of the curriculum design project was to model and explore processes of curriculum design and development, and to build capacity among pre and in-service teachers. The pre-service teachers worked together with school staff to develop curriculum units that incorporated



sustainability perspectives and interdisciplinary approaches. The curriculum project used an Understanding by Design framework and took place in five stages, outlined as follows:

1. Big Picture Brief - introducing the design process and challenge in context;
2. Outcomes and unit ideas;
3. Discipline overviews and lesson ideas;
4. Adding detail and depth to materials;
5. Presentation of final curriculum materials.

In all stages of the curriculum design project, pre-service teachers worked with more experienced in-service teachers, and with me as a university mentor. In seeking to move beyond traditional models of professional experience in this partnership we were seeking to establish a community of practice that involved learning for both the pre and in-service teachers.

### **Self-study for Learning about Practice**

Self-study has a focus on the study of practice which is improvement aimed, with Berry (2007) arguing that self-study is a form of practitioner research which uses data sources to explore issues of interest to the teacher in context. Morwema, Malcolm, and Williamson (2009) argue that through self-study wisdom about practice is generated, with self-study occurring in collaboration with others to generate deeper understandings of practice. Samaras (2011) describes five elements underpinning self-study as: personal situated inquiry; critical collaborative inquiry; improved learning; a transparent and systematic research process; and, knowledge generation and presentation (p. 10). The collaborative aspect of self-study is a central part of the research process as a means of creating what Samaras (2011) contends is ‘an ongoing

dialogue about your research’ (p. 13). In this research, this ongoing dialogue has taken place through discussions with a critical friend, both in person and via email.

## **Data Sources**

Multiple sources of data can be generated in self-study in order to develop understandings of practice. Samaras (2011) argues that self-study researchers need to make their processes of data generation and analysis clear and transparent in order to develop systematic understandings of practice and of method. In this research project multiple sources of data have been drawn from including: my journal in which I recorded observations, experiences, ideas, and moments of practice as field notes; email correspondence; and survey data. The survey data was drawn from two surveys of both pre and in-service teachers, asking them questions about their understanding and knowledge of sustainability perspectives in the curriculum and the processes of developing curriculum in conjunction with others. 26 pre and in-service teachers completed the surveys. Survey data was anonymous and each survey response was given a pseudonym, with these pseudonyms used in this paper.

## **Analysis of Data**

In order to analyse the data I began by identifying journal field notes and email correspondence related to the curriculum design project. I then used these extracts and the survey data to create initial codes that related to ideas emerging from the data. These initial codes were then used to generate themes that best represented the concepts emerging from the data. In analyzing the data I identified a number of key themes that characterize the learning arising from the collaborative curriculum design project, however, in this paper I focus only on two: 1) Curriculum

development and professional knowledge; and, 2) Learning to work in a community of practice. In the following section of the paper I will explore each of these themes in more detail.

### *Curriculum development and professional knowledge*

Through participating in the collaborative curriculum design project pre-service teachers suggested that they were able to learn about the cognitive and social dimensions of curriculum development, and expand their professional knowledge. They identified a number of professional skills that they developed throughout the project including: time management, communication skills, teamwork, problem solving, relationship building skills, negotiation skills and strategic planning. Pre-service teachers made connections to their prior experiences and learning with Matt describing the process of curriculum development as “*similar to the graphic design process – it requires a brief (what you are trying to achieve), an audience (the students), design criteria (AUSVELS), clear communication, problem solving skills, negotiation, investigation, creativity and plenty of evaluation and reflection to ensure the audience’s needs are being fulfilled*”. In reflecting on the professional skills required as part of the project, the students were also examining their developing identities as teachers.

Through participating in the project pre-service teachers gained a deeper understanding of the time commitment involved in generating new curriculum, with Emma commenting that, “*It is a privilege to be involved in such an ambitious and on-going project, with enormous potential to satisfy curricular and extra-curricular requirements for the school for a number of different year levels. It is not a simple project, and it is through participation that I realised how much time commitment and effort that the teachers have put into it*”. Emma went on to identify the similarities between the curriculum development project at the school and the requirements of

one of her on-campus subjects, *“Both projects consist of: unit overview, program introduction, lesson plans, assessment and criteria, as well as resources. These are useful skills for us to have in our professional practice”*. My field notes contain reference to another student, Sam, commenting during a group meeting, that the curriculum development project enabled him to apply information learnt in the university context to his practice in the school, with Sam reflecting that, *“I didn’t really understand it when we went through it in class, but here, I can see how it works in practice”*.

Pre-service teachers described their uncertainty about the process at the start of the project, however, as time went on their confidence grew as they developed relationships with the teachers and each other. Sarah described it in the following way, *“Reflecting back on this time I learnt that looks could be deceiving. I had originally thought that I was the only one who did not have a clear understanding on the project requirements and felt silly for asking questions. The more I asked questions the more I got to understand how curriculum planning works in schools”*. As the students grew in confidence their participation in the community of practice developed and they began to identify the way teachers advocate for their discipline area in the process of developing integrated curriculum units, *“It is also important that you attend every meeting for your voice to be heard. When planning curriculum you need to stick-up for your method area but also be open-minded and see that there are other possibilities you may not have considered”* (Emma).

The survey data indicated, however, that one of the key skills students were developing was an understanding of working as part of a team with Sam commenting that, *“It gave me the opportunity to work with teachers outside of my method areas and see the challenges each department faces within the school community. It also allowed the chance to see how teachers*

*and departments could work better together to utilize each other's strengths".* It is this notion of learning to work as part of a team or a community of practice that I explore in the next section of the paper.

### *Learning to work in a community of practice*

Both the survey data and my field notes indicated that a key element of the learning occurring through the curriculum design project was learning about negotiating relationships in this third space partnership and community of practice. In both the survey data and my field notes, I identified the tensions between pre-service teachers as they worked collaboratively as part of the design project. Some pre-service teachers were initially enthusiastic about being involved but once they realised the commitment that was required they became less interested, with Sarah suggesting that for future projects we *"make it clear that students do not need to be involved and those who just see it as more work instead of an opportunity should not participate"*. For some of the pre-service teachers working in a community of practice was difficult as they had to learn how to raise and address challenging issues that arose when people in the team were not meeting deadlines for work, *"Two of us seemed to get involved while the other member went ahead doing his or her own thing and editing work we had completed without telling us. At the time I let this slide as we were on a deadline and trying to get what needed to be completed finished. In the future it would be best to be upfront with how I and the rest of the group felt and give the person the opportunity to explain their position"* (Sarah). The challenge of working with people who may not have been as passionate about the project, or who found it difficult to meet deadlines the group had agreed on was something that pre-service teachers reflected on, making connections between their experience and the implications for their future practice as teachers.

Working as part of a community of practice with more experienced teachers was one of the benefits identified by pre-service teachers. The ability to participate in ongoing professional dialogues with teachers who were not their mentor teachers was identified as enabling them to learn more about the way schools operate and work, with Sarah describing that *“it was through these conversations that I found the project to be extremely beneficial and an opportunity to explore the inner workings of the school”*. This view was also reflected in feedback from Emma who described the way that her personal learning occurred through working the experienced teachers, saying that their *“wealth of knowledge and passion for their profession is inspiring and makes me want to be a teacher”*. In the project teachers became mentors for pre-service teachers and found themselves reflecting on their own professional knowledge and identities, and taking advantage of opportunities to share their knowledge and experience with others. This also involved working collaboratively to present on the development of sustainability curriculum at a national conference.

Despite the challenges of working as part of a community of practice, pre-service teachers were able to identify the benefits that arise from working with colleagues in developing new curriculum. Matt described it in the following way, *“Overall, I have learnt that when working in a team you need to work together. Every team member needs to contribute and be open-minded for the group to be truly successful. When this occurs ideas can expand and develop into something greater than you would have produced individually”*. It is this notion of the collective power of working as part of a community of practice that emerges from a process such as this, and enables pre-service teachers to build their professional and personal understandings of not only curriculum development, but of teaching.

### **Transformative Power of Communities of Practice in Third Space**

The process of conducting a self-study to examine the learning that arises through a community of practice in third space has highlighted the transformative power of such initiatives. While establishing a third space partnership and community of practice can be challenging as one has to negotiate relationships and structures of schools and universities, there exist opportunities to engage pre-service and in-service teachers in ongoing learning. Through participating in a collaborative curriculum design project pre-service teachers are able to develop their professional knowledge and skills by working with more experienced teachers. For in-service teachers, opportunities exist in being able to work with pre-service teachers in ways that move beyond traditional models of professional experience placements. It also enables in-service teachers to develop their identities by engaging them in opportunities to share their professional knowledge and skills both within and beyond the school.

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# **Developing engaged learners: Working with teachers in collaborative partnerships to develop secondary classroom practices**

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## **Abstract**

Student engagement has been widely researched and is viewed as vital to the educational success of students. At a classroom level, there are numerous strategies that teachers can employ to enhance the engagement of students, however, these strategies can get “lost” due to the hectic nature of the classroom and the workload of teachers. In this paper, collaborative partnerships between teachers in two secondary schools and a small university team will be discussed, highlighting how the lens of student engagement was used to shape discussions on developing classroom practices that assist students with their learning and better engage them. The implementation of these classroom practices will be highlighted as will student reaction to the changes through student engagement data. Drawing on quantitative data on student engagement and qualitative data from classroom observations and interviews with members of the collaborative partnerships, I will identify characteristics and strategies that are needed to support partnerships between teachers and teacher educators.

**Keywords:** student engagement; collaboration, partnerships

## **Introduction**

Student engagement is seen by many researchers as essential to the educational success of students (Newmann, 1989; Pike & Murphy, 2005; Wang & Holcombe, 2010). Researchers such as Tadich, Deed, Campbell, and Prain (2007) espouse that teachers believe that better teaching

and higher levels of student engagement stems from building a wide range of teaching strategies that can be implemented at appropriate times. But how do teachers build this wide range of teaching strategies that they see as essential? In this paper, the implementation of collaborative partnerships between two schools and a university will be reported, highlighting the way that the teachers and researchers worked together in a partnership that would be described by Butcher, Bezzina, and Moran (2011) as a transformational partnership. The results of this partnership are reported as identified changes to student engagement. Literature in the areas of student engagement and collaborative partnerships will now be briefly reviewed.

## **Literature Review**

### *Student Engagement*

Student engagement has been described in many different ways, but if it is considered in a classroom context, student engagement can be thought of as the extent to which students “invest” in their learning (Newmann, 1989). To further examine the classroom context of student engagement, Fredricks, Blumenfeld, Friedel, and Paris (2003), suggest that student engagement can be thought of as a multi-dimensional construct, with consideration given to the dimensions of emotional engagement, cognitive engagement and behavioural engagement to gain an overall picture of the engagement in a particular classroom. Each of these three dimensions of engagement (Fredricks, et al., 2003) can then be defined individually to enable a better understanding of student engagement in the classroom. Emotional engagement can be thought of as how students are feeling about what is happening in their classroom (Fredricks, et al., 2003). This could include the strength of relationships within the classroom (Klem & Connell, 2004) and how enjoyable a particular student finds a class (Park, Holloway, Arendtsz, Bempechat, &

Li, 2012). Cognitive engagement can be thought of as the child's psychological investment in their education (Fredricks et al., 2003; Newmann, 1989) and the way they strategically connect with the subject matter presented (Fredricks, Blumenfeld, & Paris, 2004). Klem and Connell (2004) suggest that cognitive engagement is more than just strategically connecting with the subject matter, but also the application of this subject matter to situations that are unfamiliar to the student. Behavioural engagement can be viewed as the involvement of students in classroom activities (Fredricks et al., 2003; Fredricks, 2011). Behavioural engagement could include the broad issues of positive conduct and attendance (Fredricks, 2011) and the propensity of students to stay on task during class time as well as their willingness to complete and submit class work (Klem & Connell, 2004).

### *Measuring Student Engagement*

There are several different methods that researchers have used/recommend to measure student engagement. These include student self-reports through survey or interviews (Ahlfeldt, Mehta, & Sellnow, 2005; Chapman, 2003; Libbey, 2004), teacher surveys, interviews and checklists (Chapman, 2003; Libbey, 2004) and direct observations of student behaviour or of the work that students are producing (Chapman, 2003). A number of different methods need to be used to accurately measure student engagement (Chapman, 2003). Engagement data in a number of different dimensions such as the emotional, cognitive and behavioural dimensions (Fredricks et al., 2003) must be collected in order to get a complete picture of the student engagement in a particular class (Chapman, 2003; Finlay, 2006). The reliability of any survey instrument used to compare student engagement is essential to ensure valid conclusions are drawn (Finlay, 2006). To determine if a survey is reliable, the Cronbach alpha value for each scale in a particular survey must be calculated. This Cronbach alpha variable should be above 0.7 if the scale is to be

considered reliable. The closer this variable is to one, the more reliable the survey can be considered (Finlay, 2006).

A number of researchers (e.g. Ahlfeldt et al., 2005; Libbey, 2004) have reported results from measuring student engagement using student self-reporting in particular classes. To measure the student engagement in American university classes, a student survey instrument was implemented that asked students to self-report how they were thinking about the subject matter, how well they were working with other students in a particular class and how well they were relating the subject material to real life situations (Ahlfeldt et al., 2005). If the student survey instrument used in Ahlfeldt and colleagues' (2005) study is examined using the multidimensional engagement construct (Fredricks et al., 2003), Ahlfeldt's team's questions could be described as being mostly in the dimensions of emotional and cognitive engagement. Researching survey questions that have already been trialled in classes from a range of different sources can be a starting point to creating a new survey instrument. This type of research can assist in understanding the types of questions that can be used to determine student engagement (Libbey, 2004).

Observation is another method that can be used to ascertain engagement levels in a particular class (Chapman, 2003). Children who are engaged with their learning show certain learning behaviours that can easily be observed. Behaviours such as a willingness to choose tasks at the upper end of their competency range, curiosity, and a willingness to initiate actions and persevere all indicate that a learner is engaging with the learning activity (Chapman, 2003). These types of observations could lead to data being obtained in the three dimensions of engagement (Fredricks et al., 2003).

### *Transactional, Collaborative and Transformational Partnerships*

School and University partnerships have a long history, with the needs of the University often being the reason for the partnership to be formed (Walsh & Backe, 2013). Such partnerships are often begun by individual stakeholders and when formed, involve some sort of project that meets a specific need of one of the partners and continue until this specific need is met. When partnerships are set up in this way, they would not normally lead to long term change in either partner organisation (Walsh & Backe, 2013). Such partnerships that involve the specific needs of only one partner are often referred to as transactional partnerships (Butcher, et al., 2011; Teitel, 2008), since they allow partners to work together to achieve a goal, but do not normally require partners to substantially change the way they work (Teitel, 2008).

A growing number of researchers (eg. Butcher et al., 2011; Kayser, 2011; Teitel, 2008, Walkington, 2007), suggest that school/university partnerships need to be far more collaborative in nature than traditional transactional partnerships. Such enhanced partnerships would share goals that allow the partnership to be of mutual benefit to all involved. Walkington (2007) highlights the need to develop partnerships that can be sustained and suggests that this can be achieved through open and honest communication that focuses on the benefits that the partnership can deliver for all participants. Kayser (2011) suggests that the sort of communication espoused by Walkington (2007) is only a part of the approach that needs to be taken when setting up a collaborative partnership. Kayser (2011) identifies six key features that must be considered when working in a collaborative partnership. These key features include the structural features of sharing goals, accountability and interdependence as well as the behavioural features of commitment, character and authentic communication. Kayser's (2011) view of collaborative partnerships contrast with descriptions of transactional partnerships (Teitel,

2008), since they require far more communication, commitment and accountability from all parties to ensure that shared goals are met.

Partnerships that go beyond collaboration can be termed as transformational partnerships (Butcher et al., 2011; Teitel, 2008). Transformational partnerships are ones where the success or failure of a particular project is a joint responsibility (Teitel, 2008) and where all parties involved in the partnership are open to change (Butcher, et al., 2011). Such transformational relationships must be nurtured through communications that are open and honest, and where each party values the strengths of the other partners (Butcher, et al., 2011). When these types of relationships are developed between schools and universities, deep, long term connections are forged between all partners. Such deep connections can lead to efficient and effective partnerships facilitating significant change in each organisation involved (Teitel, 2008).

## **Methodology**

### *Research Questions*

The following questions were examined as part of this research:

- Can student engagement be improved through the modification of teaching practices?
- What strategies and characteristics support partnerships between teachers and university staff?

### *Classroom Context*

Australian secondary school classes are normally arranged according to the ages of the students and focus on a particular subject area. These classes usually contain a maximum of 25 students and are considered to be mixed ability groups. Students (n=122) in this study came from five such classes in two different schools. The researcher visited each class regularly observing these

students in either mathematics or science classes. The researcher observed classes where students undertook a wide range of learning activities such as practical exercises, written activities, problem solving and group work. The teachers (n=3) involved in the study taught in the areas of mathematics and science and were considered in the schools to be experienced practitioners.

#### *Pre-work with teachers*

The teachers involved in the project all expressed a desire to implement change within their classroom to improve student engagement. Before commencing work with the school, the researcher worked with the teachers and school leadership group to examine goals from both the school and university points of view. While the goals identified by the teachers differed to those identified by the researchers, agreement about how both sets of goals could be achieved simultaneously was discussed. Role clarity was also discussed at these meetings so that it was clear what the roles of both the teacher and researcher were.

The researchers and each teacher then worked collaboratively to redevelop the curriculum for the teacher to deliver. This process began with the identification of three to four key ideas that the curriculum content would focus on and then progressed by developing key activities derived from the curriculum that linked to the students' experiences and interests. The key activities were also designed in a manner that catered for students at a number of different ability levels as well as facilitating discussion between students, giving them the opportunity to refine their thinking and develop a deeper understanding of the key ideas. During discussions about the development of activities, the lens of student engagement was used to ensure that students connected with the redesigned activities on both an emotional and a cognitive level. The development of such activities was seen as a joint responsibility between the teacher and the researcher.



## Results

### *Survey responses - engagement*

The quantitative data was collected in five different classrooms with three different teachers using a purpose designed student engagement survey. Table 1 summarises this data, showing the mean (for each of the three scales) collected from students (and teachers) from each class both before and after each curriculum intervention was implemented. The value in brackets denotes the standard deviation for each set of results. The development and validation phase of the survey instrument is described briefly in Appendix 1.

Table 1. Engagement as reported by students

	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>	<b>Class 4</b>	<b>Class 5</b>
	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>
	<b>(S.D.)</b>	<b>(S.D.)</b>	<b>(S.D.)</b>	<b>(S.D.)</b>	<b>(S.D.)</b>
Emotional engagement before	2.69	2.76	2.80	2.97	2.70
Intervention	(0.72)	(0.71)	(0.71)	(0.62)	(0.96)
Emotional engagement after	2.82	3.23	2.90	3.13	2.79
Intervention	(0.78)	(0.61)	(0.64)	(0.70)	(0.72)
Cognitive engagement before	2.26	2.29	2.24	2.64	2.54
Intervention	(0.73)	(0.69)	(0.82)	(0.82)	(0.92)
Cognitive engagement after	2.40	2.63	2.56	2.76	2.72
Intervention	(0.84)	(0.81)	(0.66)	(0.71)	(0.81)
Behavioural engagement before	2.77	3.00	3.02	3.26	2.94
Intervention	(0.66)	(0.58)	(0.62)	(0.54)	(0.69)
Behavioural engagement after	2.79	3.13	3.11	3.37	2.97
Intervention	(0.69)	(0.51)	(0.61)	(0.53)	(0.68)

Table 1 shows that students reported that all three engagement indicators increased after the curriculum intervention in all of the classes studied. Effect sizes were then calculated to determine the significance of each change. These effect sizes are shown in Table 2.

Table 2. Effect Sizes for engagement scales

Scale	Class 1	Class 2	Class 3	Class 4	Class 5
Emotional	0.17	0.71	0.14	0.24	0.11
Cognitive	0.18	0.45	0.43	0.16	0.21
Behavioural	0.02	0.23	0.15	0.20	0.05

It is interesting to note that all classes recorded positive effect sizes in all three engagement scales. The effect sizes shown in Table 2 suggest that several of these changes could be significant. Cohen (1992) states that an effect size between 0.2 and 0.5 can be considered a small effect size, while an effect size of between 0.5 and 0.8 can be considered a medium effect size. Effect sizes over 0.8 can be considered large effect sizes while effect sizes less than 0.2 can be considered as no effect. Table 3 shows the type of effect size calculated for each scale in each class.

Table 3. Type of effect sizes for engagement scales

Scale	Class 1	Class 2	Class 3	Class 4	Class 5
Emotional	No	Medium	No	Small	No
Cognitive	No	Small	Small	No	Small
Behavioural	No	Small	No	Small	No

Table 6 shows that while all of the classes recorded positive effect sizes, three out of the five classes had scales that changed with small effect sizes while the results obtained for one of the

classes (Class one) had no significant effect size change recorded on any of the three scales. Class two recorded significant changes in all three of the scales with the emotional engagement scale being the highest recorded change in any of the classes.

#### *Interviews with teachers*

The three teachers involved were asked a range of interview questions at the end of the agreed collaboration time. All three of the teachers were positive about the changes to curriculum and engagement levels in the class typified by:

**Ava:** *"The approach seemed to improve the participation rate in practical activities and discussion. I didn't think it had a particularly positive or negative effect on student behaviour but I thought that the students were more engaged".*

**Camilla:** *"I will be ensuring that this approach remains within my teaching practices across all my classes, including senior classes."*

These teachers were also very positive about the collaboration with the university staff stating:

**Ava:** *"It brings in different knowledge and a lot of different experiences from outside the classroom, from other schools and lecturers and researchers have had different experiences within the maths classroom that I've had, so they're able to bring along ideas and we've trialled different strategies from that".*

**Bec:** *"Working with the Uni, it's nice to get an objective viewpoint and especially because you guys (the researchers) go to multiple schools across regions, so you have quite a perspective on strategies that work well."*

These comments highlight the benefits for the teachers involved in this partnership. When the researcher caught up with the three teachers six months after the completion of their

involvement, all three teachers reported on how the teaching strategies were working with a new cohort of students. The researcher was convinced that two of the teachers were still regularly using the trialled teaching strategies, while the third one was still using them, but appeared to be using them to a lesser extent than what was trialled.

## **Discussion and Conclusions**

This study showed that improved student engagement can be achieved through transformative partnerships between schools and universities. Such partnerships need to be set up carefully to ensure that the goals of each partner are clear to all members of the partnership and that there is clear role clarity between not only the teacher and researcher, but also between the university and the school leadership team. The benefits of such partnerships can be significant. In this case, higher student engagement in five classes was reported by the teachers during interview and more significantly by students when they self-reported on a purpose designed questionnaire. This result highlights the value of school-university partnerships provided they are set up in a manner which:

- makes clear the goals of each member of the partnership;
- gets a broad range of stakeholders (eg. leaders in both organisations, teachers, researcher) to develop a shared vision;
- works in a way where teacher and researcher collaborate to support student learning;
- regularly communicate about the progress towards goals with all stakeholders;
- focus on student engagement when developing activities for classroom use.

These findings are consistent with those of the research of Butcher, et al. (2011), and indicate that the partnership formed during the course of this study could be described as a transformational partnership.

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## **Appendix 1. Reliability calculations**

### *Survey instrument development and validation*

To develop a suitable survey instrument, it is important to first define student engagement and examine the types of questions that could be used to ascertain how engaged student are. As explained in the literature review, Fredricks et al. (2003) state that student engagement can be thought of as how students think, feel and behave while at school. As such, they suggest that student engagement can be thought of as three domains – emotional, cognitive and behavioural engagement. Fredricks et al. (2003) further suggest that these three domains of engagement overlap, with some of the characteristics of engagement being present in more than one of the

domains. For the purposes of this study, this definition of engagement was used with characteristics shown in Table 1 (based on the work of Fredricks et al. 2003) being the basis for which survey tools were developed.

**Table 1A. Characteristics of the three domains of engagement**

Domain	Defined as	Typical Student Behaviours
Emotional	Interests	Attitude
		Feeling of belonging
		Appreciation of success
		Enjoyment
	Values & Emotions	Mutual respect
		Expressing ideas
Cognitive	Motivation	Persistence
		Mental effort
		Desire to do well
		Looking for challenge
	Investment in Learning	Looking for links
		Sharing learning
Behavioural	Positive conduct	Following rules
		Paying attention
		Completing work
		Answering questions
	Absence of disruptive conduct	Not skipping school
		Staying out of trouble



Table 1A shows typical student behaviours that might indicate how engaged students are in each of the three areas. These behaviours formed the basis of questions developed for the survey instrument. During the course of this study, approximately 290 student responses using the student engagement survey were collected and analysed to determine the reliability of the survey in each of the three engagement areas (emotional, cognitive, behavioural). The result of this analysis is shown in Table 2A.

Table 2A. Cronbach's alpha for each engagement area

<b>Engagement Scale</b>	<b>no. of items</b>	<b>Standard Deviation</b>	<b>Cronbach's Alpha</b>
Emotional	5	0.57	0.78
Cognitive	5	0.63	0.77
Behavioural	4	0.58	0.71

Table 2A shows that in both the emotional and cognitive engagement scales, all five of the questions were used. In the case of the behavioural engagement scale, one question was removed to improve the reliability. Once this question was removed, the value for Cronbach's alpha coefficient was acceptable in all of the cases, as they are all above 0.7, which is generally considered acceptable for social science research (Salkind, 2006).

The refined survey instrument then had a total of fourteen questions on the three different scales.

The standard deviation and variance for each engagement area is shown in Table 3A.

Table 3A. Variance for each engagement area

Engagement Scale	Standard Deviation	Variance
Emotional	0.57	0.32
Cognitive	0.63	0.40
Behavioural	0.58	0.34

Table 3A shows that the standard deviation and variance is reasonably consistent for all three engagement scales.

This data suggests that the purpose designed survey tool is likely to be reliable in all of the three engagement areas. In the next section of this paper, results using this survey tool are displayed while interview data from both students and teachers will be summarised and compared with similarities and differences noted.

# **Being a Language educator in North Queensland: Engaging initiatives to assist in the development of teacher quality**

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## **Abstract**

Australia is considered one of the most multicultural countries in the world. *Reflecting a Nation: Stories from the 2011 Census, 2012–2013*, a paper issued by the Australian Bureau of Statistics, showed that over 19% of the Australian population spoke a language other than English at home. Despite this figure, Language education has been in crisis since the 1960s.

In fact, in 2014, being a Language educator in our lucky country is not always so lucky. The literature shows that Language teachers can experience considerable challenges throughout their career. Demotivation, lack of resources, isolation and limited professional development are some of the main difficulties faced everyday by Language educators in Australia (Ingram, 2005; Lo Bianco & Slaughter, 2009).

In the latest *Staff in Australian Schools Survey* commissioned by the Australian Government Department of Education, Employment and Workplace Relations (DEEWR, 2010), it was reported that there was a total of about 6700 Language teachers at a high school level, compared with approximately, 33200 for English, 36000 for Maths and 61000 for the Sciences. It is no surprise then that finding language teachers is challenging, particularly in rural and remote areas of Australia. This is a significant issue at a time when government priorities are resulting in increased periods of mandatory Language education in schools and are pushing for an increase in the learning of Asian languages.

This paper provides a critical review of past and present literature on the challenges faced by Language educators in Australia. It relates this research to the current situation for Language teachers in North

Queensland and presents a series of initiatives focussed on developing quality Language education in this region.

## **Introduction**

In 2014, Australia's Education Minister Christopher Pyne has on many occasions indicated his wish to see more young Australians studying foreign languages at both school and university levels. Through this message Australians have been reminded about the economic importance of its citizens gaining some foreign language skills in particular in Asian languages.

In 2013, the Department of Education of the Australian Government published a report indicating that the Australian Government was planning to revive the teaching of foreign languages in Australian schools within a decade. Their goal is to return the percentage of Year 12 students studying a language to at least 40 per cent, a figure that was last seen in Australia during the 1960s. According to language experts Lo Bianco and Slaughter (2009), the most important factor in the equation of improving the language situation in Australia is to invest in Language teachers from the moment they start university and throughout the rest of their career. Supporting Language teachers is seen as crucial to ensuring they remain in the profession.

In a 2012 ABC report by Catherine McGrath and Ross Garnaut, Distinguished Professor of Economics at the Australian National University and both the Vice-Chancellor's Fellow and the Professorial Fellow of Economics at The University of Melbourne, explained that all around the country, Language educators tell the same story: a lack of teachers, a lack of resources, a lack of enrolments. In *The Coalition's Policy for Schools: Students First* published by the Liberal National Party in August 2013 it was explained that:

*There are only around 9,500 teachers teaching Languages Other Than English, out of a workforce of some 290,000 teachers. This needs to change if we are to ensure more children have access to language education over the next decade. (p. 14)*

## **Literature Review**

There have been many language policies in Australia that recognise the importance and value of foreign language education for the nation (Ingram, 2000; Lo Bianco & Slaughter, 2009). In 2011, a survey was conducted by the Australian Bureau of Statistics revealing that 19% of the Australian population was speaking a language other than English at home. Despite the obvious bilingual richness of Australia and the extensive research that demonstrates the benefits of second language learning, language educators across the country consistently have to battle for their subject within the school curriculum and argue that their role can be of significance for the education of young Australians and the future of this country. According to Lo Bianco and Slaughter (2009), one of the possible reasons for this constant battle could be related to the negative perception of the community and students, who may not consider second language education to be critical.

It was only after the Second World War that the idea of a monolingual Australia started to change. Prior to 1945, the learning or use of languages other than English was discouraged in Australia; this is especially true for Aboriginal languages which at the time were being actively and deliberately discouraged by the Government (Lo Bianco, 1987). According to Muenstermann (2001), as language teaching was not popular in Australia, migrants decided to create their own “ethnic schools” in order to maintain some aspect of their cultural heritage.

However, the late 1960s were a period of dramatic political and social change for Australia. Ingram (2000) explains that prior to the 1960s the concept of multiculturalism was not as popular as it is today and therefore the English language was predominant in education and only some schools were teaching French, German and the classical languages (Latin and Greek). It was the introduction of the *Colombo Plan*, the abolition of the *White Australia* policy in 1972 and then, later, the implementation of the *Galbally Report* that significantly contributed to making Australia a more multicultural place with less space for xenophobia. In 1901, the *White Australia* policy was implemented and its main goal was to ensure that the future Australia would be made up of a homogenous group of British and European descendants with no space for people of colour. Ndhlovu (2008) describes this policy as being motivated by Australian's desire to guard Australian society against the perceived dangers inherent in allowing non-European, non-Anglo cultural groups into the country. One of the most disturbing restrictions of this policy was that to be eligible to migrate to the country, even European applicants had to undertake a dictation test in a language that was, in most cases, foreign to the applicants themselves. It was the immigration officers that could nominate in what language the dictation would be and it could be any of the European languages. Failing to be proficient in a certain language meant that you could be deported. It was only in 1947, under the Chifley's Labor government, that initiatives were put in place leading to the eventual abandonment in 1958 of the dictation as a requirement for migration (Ndhlovu, 2008).

The *Colombo Plan* in the 1950s was important in the history of Australia's international relations with Asia as it was the first significant step taken by the Commonwealth government to assist Australia in engaging with its close Northern neighbours (Oakman, 2010). The plan was put in place to provide assistance and greater opportunities for the people of Asia and by the same

token start a positive and long term bilateral relationship between Asian countries and Australia. However, it was not until the emergence of the *Galbally Report* in 1978 that the idea of a multicultural Australia, in which languages would be valued and cultures maintained, started to surface (Australia Government Department of Immigration and Citizenship). It is also relevant that 400,000 adult migrants had arrived in Australia from non-English speaking countries in the two years prior to the endorsement of the report. As a result, it was necessary for the government to implement programs and services that would enable all Australian society to achieve its full potential while at the same time being given opportunities to maintain its diverse cultural and linguistic heritage (Claydon, 1981).

According to the Australian Immigration Department (2012), these measures have benefited Australia at economic, humanitarian and social levels. Australia, which used to require all of its immigrants to learn English and British values, started to take further steps to encourage multiculturalism whilst acknowledging the new wave of cultural and linguistic diversity. Despite these official policies to boost multiculturalism in Australian society, immigrants were still being pressured to assimilate into the dominant Anglo-Celtic identity (Parry, 1998). However, language policies that were purposely focussed on addressing language issues in education started emerging in the 1980s (Ingram, 2000). In addition, funds were allocated to support ethnic schools, radio and television programs and newspapers in the languages of the Australian migrant communities (Ingram, 2000). These initiatives were of real value to Language educators. They allowed for language maintenance of migrants, the development of language awareness and, in some cases, a feeling of acceptance in the people of Australia.

While Australians may have accepted the fact that they are living in a country of multicultural richness where people speak different languages and share different cultures and beliefs, in

reality the take-up of language learning in schools is still relatively low. The numerous language policies that have been put in place to promote second language learning in Australia reflect this persistent attitude. Despite the recognition of the economic and social benefits of multilingualism to Australia, year after year, the question appears to have remained unchanged in Language education policy and practice: Should language studies really be mandatory for young Australians in school?

There are over 20 different languages taught each year in Australian schools. In 2005, a total of 1,735,754 students were studying a language at some level throughout their schooling years (Liddicoat, Scarino, Curnow, Kohler, Scrimgeour, & Morgan, 2007). At first, these figures may indicate that the situation is satisfactory; that Australians are very much engaged in second language education. However, the number of language students in the senior school continues to remain low in comparison with other Western countries. According to Lindsey (2007) only 13% of final year secondary students are graduating with a second language compared to 40% in the 1960s. A report published by the *Group of Eight* Australian universities\* in 2007 showed that the history of second language education is not very glorious at university level either with numerous language programs being closed down throughout the years, leaving the number of languages being offered at just 29 in 2011 compared to the historical figure of 66 in 1997.

Australia is a multicultural country and because cultures are always accompanied by languages, serious thoughts about the Language education situation in Australia have always been necessary. Language policies have helped to secure millions of dollars for Language education in Australia showing the commitment of the Australian Government to growing a multilingual country. For instance, the 2012-2013 Annual Report from the Department of Education, Employment and Workplace Relations explained that:

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\* *Group of Eight* Australian universities is a coalition of leading Australian universities



*The Government's School Languages Program provided \$112 million from 2005 to 2008 to state and territory education authorities to support the teaching and learning of Asian, European, Aboriginal languages, Torres Strait Islander languages and Auslan in schools and community language programs in ethnic schools. [...]The Government is also providing \$62.1 million over 2010–11 to 2013–14 through the Schools Assistance Act 2008 to support the teaching of Asian, European, Aboriginal languages, Torres Strait Islander languages and Auslan in non-government schools. (DEEWR)*

Recently, the Commonwealth Government provided \$9.8 million over two years from 2014-15 to conduct a one year trial to determine the effectiveness of early exposure to languages other than English through online language learning programmes (Australian Government Budget, 2014). However, this past and present investment does not seem to have had a major impact at the level of the daily Language teacher or on the number of Language teachers in schools. In fact, a report commissioned by Australian Council of State School Organisations and the Australian Parents Council, *The National Statement and Plan – making a difference or another decade of indifference?*, based on research conducted by Solved at McConchie Pty Ltd explained that:

*A shortage of language teachers remains a major impediment to the realisation of strong, universal languages programs. Replacing teachers who are transferred take leave or resign is a challenge for schools and jurisdictions. Sometimes a new language is started simply because a qualified teacher of the former language cannot be found. (June, 2007, p.33)*

In addition, Lo Bianco and Slaughter (2009) stated that:

*Teacher supply is arguably the most significant challenge facing languages education in Australia and the departure point for investigation of current provision and uptake. (2009, p. 42)*

Finding teachers, especially language teachers, to work in rural and remote areas of Australia is even more of a challenge. James Cook University is the main tertiary educator providers to communities living in North and Far North Queensland with two of its main campuses being located in Townsville and Cairns. Despite both campuses offering students the possibility to earn a Language education degree, in 2014 JCU has less than ten future language teachers in their final year of study. According to the Queensland Government schools directory, there are just under 500 schools in North Queensland and Far North Queensland. In 2012, James Cook University discontinued the Bachelor of Languages and the Bachelor of Education due to falling enrolments. Studies to become a Language teacher in the North can now only be completed through a generic Bachelor of Arts and a Bachelor of Education. In addition, students are now not able within these degrees, to select two languages as their teaching areas. This means they cannot graduate as a (solely) Language educator. This situation adds to the recruitment challenge for schools in sourcing qualified language teachers to work in North and Far North Queensland.

### **Transformation in North Queensland**

At present, the dominant languages taught in schools in North and Far North Queensland are Japanese, Italian and French. Some schools are offering Chinese (Mandarin) and German. Only a few schools offer Indonesian. In May 2012, a language teachers' meeting was organised at James Cook University campus in Townsville. This Language forum was a first for Language teachers in the region, the purpose of which was to create a stronger sense of community amongst existing Language teachers in the region. The forum was also the start of promoting second language learning to the people of North and Far North Queensland more broadly. A total of 28

language teachers participated in the free event. Throughout the forum, teachers completed surveys. The results showed that 42% of Language teachers feel isolated in secondary schools compared to 75% in primary schools. In addition, despite 74% of Language teachers agreeing that retention was a problem for languages in school and 48% believing that people in North Queensland are not interested in learning a foreign language, 92% of these Language teachers said they loved their job.

The survey results led to a renewed effort on the part of the university to assist and support these teachers and to see Language education growth in this part of Australia. A holistic approach was adopted underpinned by the work of Lo Bianco and Slaughter (2009, p. 27):

*All too often it is assumed that the motivations learners have available to them are the prospects of employment and other material advantage that attach to language learning. This outsider perspective on motivation is less tenable today in light of the powerful shifting of emphasis towards the internal perspective and experience of learners, and on the quality of micro-school experiences in influencing motivation, persistence and interest among language students (Dörnyei, 2001a, 2001b, 2005, 2009) [...] policy is practice, in the hands of individual teachers and schools.*

By September 2012, a Language teacher's network had been established, the *North Queensland Language Teachers' Network*. Through this network, ongoing meetings have been organised and professional learning opportunities made freely available for Language educators in the region. Later, in 2013, an *Academy of Modern Languages* was launched at the Cairns campus of James Cook University in the hope of providing access to language education to the people of Far North Queensland but also to educate members of the community of the benefits of learning a foreign language.

As partnerships with schools became stronger, and teachers were able to communicate more effectively, James Cook University established a Language Mentor program in 2014. As part of this program, university students currently studying languages are working in collaboration with Language teachers in schools. These students are regularly attending language classes and working as mentors in the classroom. Teachers have found the program to be inspiring to school students while providing additional opportunities for authentic speaking and listening practice. The university students have also found the program rewarding as it helps them develop their leadership skills. For some of the students they have discovered a passion for teaching and are considering enrolling into a Graduate Diploma of Education upon completion of their undergraduate degree to become Language teachers themselves.

In June 2014, the discipline of Languages from the College of Arts, Society and Education at James Cook University received a HEPPP grant of \$31,742 to assist in the development of a *Young Language Ambassador* program. The JCU *Young Language Ambassador* program is a partnership between JCU and schools in the region that promotes the study of foreign languages while providing young people with the opportunity to develop their leadership skills. The program aims to reward outstanding Language students, promote internationalism in schools, increase students' retention in languages and continue to foster deeper relationships between JCU and the wider community. Students participating in this program will be invited to participate in young leadership workshops and an annual conference. Through this program, it is hoped that a vision for second language learning in the North and Far North Queensland region will be developed.

## **Conclusion**

Language teaching can be difficult in Australia but the described initiatives have helped to create a sense of community amongst Language educators in our region. Together, Language educators are working towards a common goal, restoring the profile of second language education in North and Far North Queensland and educating the wider community about the benefits of learning another language. As more young people participate in language programs, they will develop skills and attributes that will prepare them to make successful contributions to our region. Having more internationally-minded young leaders can bring a lot to any growing society, particularly when those leaders are local people. Finally, having more second language learners has the capacity to also increase the number of future language teachers, feeding into a cycle of growth for languages.

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# **Effective teaching of students with diverse linguistic, cultural, religious and socioeconomic backgrounds: A critical literature review**

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## **Abstract**

The Australian Institute for School Teaching and Leadership's (AITSL's) *Australian Professional Standards for Teachers*, Standard 1, requires teachers to demonstrate professional knowledge as to how students with diverse linguistic, cultural, religious and socioeconomic backgrounds learn. Sleeter (2011) and Macfarlane, Glynn, Cavanagh, and Bateman (2007) argue that professional learning in culturally responsive pedagogy can impact teacher effectiveness but the how to apply it into the classroom context is not clearly understood.

In Far North Queensland, Australia, schools in the last 10-15 years have been involved in the resettlement of refugees from a number of countries under the UNHCR program. Although the State education department has a long history of catering for students who have English as an additional language (EAL), professional learning in second language acquisition and working cross-culturally has been sparse and predominantly focussed on Indigenous-specific needs. Many teachers seem to have had little, if any, initial training or opportunities for sustained professional learning in culturally responsive pedagogy more broadly. Nor, it seems, is this a priority. A large body of literature around refugee resettlement (Bean et al., 2006; Pugh, Every, & Hattam, 2012; Taylor, 2008; Taylor & Sidhu, 2011) suggests that schools play a major component in the successful resettlement of refugee children. This paper presents a critical review of literature focused on critically responsive pedagogy and effective teaching of culturally and linguistically diverse students. The review identifies that personal and professional nature of culturally responsive pedagogy presents significant challenges for teacher education and ongoing professional learning and that more research is needed into how to support teachers' culturally responsive capabilities in contexts of practice.

## Introduction

The Australian Institute for School Teaching and Leadership's (AITSL's) *Australian Professional Standards for Teachers*, Standard 1, requires teachers to demonstrate professional knowledge as to how students with diverse linguistic, cultural, religious and socioeconomic backgrounds learn. However, Sleeter (2011a) and Macfarlane, Glynn, Cavanagh, and Bateman (2007) argue that how to apply such professional knowledge into the classroom context is not clearly understood.

In Far North Queensland, Australia, state schools in the last 10 - 15 years have been involved in the resettlement of refugees from a number of countries under the UNHCR program. Although the State Education Department has a long history of catering for students who have English as an Additional Language (EAL), professional learning in second language acquisition and working cross-culturally has been sparse in recent years. When it does occur, it has predominantly focused on Indigenous-specific needs. This lack of attention to language and cultural diversity is explained in the literature as a phenomenon associated with schools' almost singular focus on student performance in the *National Assessment Plan in Literacy and Numeracy* (NAPLAN) (Sydney Morning Herald, June 15, 2014; Australian Parliament House, 2013).

Lo Bianco, as far back as 1999 when standardized testing was first introduced in Australia, articulates concern that

*...narrow definitions of the literacy enterprise have been used to stifle curriculum choices, to introduce regimes of testing that may have the effect of constraining appropriate legitimate diversity in schooling and to overwhelm to responses of schools to the needs of minority language interests (such as ESL and bilingual education). (pp. 40-41)*



There is a consistent argument in the literature that the high value nature of these performance data, narrows the curriculum and can have a detrimental effect on minority language student learning (Cummins, 1986, 1989; Cummins & Swain, 1986; Green, Hodgins & Luke, 1997; Lingard, Hayes & Mills, 2002; McKay 1998, a, b; 1999; McNaughton, 1995; Michell, 1999; Taylor, 2010). Furthermore, high stakes (for school and teacher performance) testing diverts teachers' and schools' attention away from diverse students' learning needs, inevitably positioning them, (Davison & Williams, 1999) or their teachers, as deficit.

The role of schools for refugee students is particularly important. A large body of research (Bean, Immigration, Citizenship, & Services, 2006; Pugh, Every, & Hattam, 2012; Taylor, 2007; Taylor & Sidhu, 2011) suggests that schools are critical in the successful resettlement of refugee children. However, in the current high-accountability educational climate, teachers have few, if any, opportunities to either implement pedagogies for culturally and linguistically diverse learners or engage in sustained professional learning in culturally responsive pedagogy. Nor, it seems, is this a priority in schools.

This paper presents a review of literature focusing on critically responsive pedagogy as a way of effectively teaching culturally and linguistically diverse students and refugee students in particular. It highlights a significant gap in current knowledge and the need to understand how to reorient teachers' attention and practice to *Australian Professional Standards for Teachers* Standard 1, in the context of standardization and regulation of curriculum, pedagogy and assessment.

### **The Evolution of Culturally Responsive Pedagogy**

The concept of culturally responsive pedagogy has evolved over time but in essence it is a pedagogy which effects a closer fit between students home culture and the school (Eadson

Billings, 1995) with the aim of improving academic achievement of students of culturally and linguistically diverse backgrounds. The idea of bridging the gap between culturally and linguistically diverse groups and the mainstream has been discussed and researched for over 30 years through many cultural difference studies. A range of key constructs or terms have been used in this period to conceptualise how teachers might work with a standardized curriculum in cross cultural contexts. These key constructs include culturally *congruent* (Erickson & Mohatt, 1977) culturally *appropriate* (Au & Jordan, 1981), culturally *responsive* (Cazden & Leggett, 1981; Erickson & Mohatt, 1982), and culturally *compatible* (Jordan, 1985; Vogt, Jordan, & Tharp, 1987) pedagogy.

In a study of Native Americans students (Erickson & Mohatt, 1977) it was observed that teachers who approximated their language patterns to those of their students' home cultural patterns were the most successful in academic achievement. The authors referred to this as *culturally congruent* pedagogy. The findings in the study showed that this framework did effect academic success. However, in terms of transferability to other contexts, it must be noted that participants in this study came from a context of one culture and one language. Nevertheless, the importance of the link between community and school in academic success of culturally diverse students is transferrable across contexts.

The term culturally *appropriate* pedagogy was used by Au and Jordan (1981) to describe how school learning could be congruent with the ways of learning in the home culture. Au and study of a reading program, looked at teachers who incorporated aspects of their students' culture into their reading program in a Hawaiian school. Teachers encouraged a "talk story" language interaction style used in Hawaiian culture in the school reading program and were able to improve standardized testing in reading dramatically. However as Osborne (2001) explains,

culturally “appropriate” suggests that “...something is proper or correct. This implies that we know the right adjustments to make, that there is no subsequent room for modification/improvement” (p. 59). Students in this study did improve their reading scores in standardized tests but again, this approach is not necessarily apposite in contexts of cultural and linguistic diversity given that not all cultural groups in Australian teachers’ classrooms share the same home communication style.

Another term, culturally *compatible* pedagogy, emerged out of the Kamehameha Elementary Education Program (KEEP) in urban Honolulu in the 1970s. Jordan (1985) defines culturally compatible pedagogy as “...educational practice [which] must be compatible with the culture(s) of the children being educated” (p. 112). The focus of this approach draws on behaviourist theories of learning: “The point of cultural compatibility is that the natal culture is used as a guide in the selection of educational program elements so that academically desired behaviors are produced and undesired behaviors are avoided” (p. 112). Again, this approach positions school and home culture in a differential power relationship where the home culture may be seen as something to the “avoided” in the context of the school.

Culturally *responsive* is a term used by Cazden and Leggett (1976) to describe a pedagogical framework that emphasises the need to acknowledge (and respond to) student differences. By acknowledging these differences teachers were asked to reflect on what must be changed in their pedagogy in order to be effective. Osborne (2001) in his analysis of Cazden and Leggett’s work, added that school systems (not just teachers) need to understand how children learn so that appropriate pedagogy can be used to provide educational success. This concept has been expanded in the literature from the Cazden and Leggett’s (1976) foundational work. Gay (2010) for example, defines culturally responsive pedagogy as one which uses “...the cultural

knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them” (p. 50). This conceptualisation seems to resonant strongly with both the AITSL standards, where teachers need to “... demonstrate knowledge of teaching strategies that are responsive to the learning strengths and needs of students from diverse linguistic, cultural, religious and socioeconomic background.” (n.d., n.p.nos.), and with the diverse contexts within which Australian teachers currently work. Schools and the teaching workforce are not heterogeneous, so any conceptualisation of culturally responsive pedagogy needs to reflect this (Brown-Jeffy & Cooper, 2011).

Culturally responsive pedagogy both allows a space for students to maintain their cultural integrity (Gay, 2002, 2013; Ladson-Billings, 1995; Ladson-Billings, 1995; Sleeter, 2011a) and for teachers to address the achievement gap in cultural and linguistic diverse groups. In order to enact such a pedagogy, literature suggests that teachers must have two important attributes: cultural competence and socio-political consciousness (Brown-Jeffy & Cooper, 2011; Gay, 2013;

Ladson-Billings, 1995; Young,2010 ). Cultural competence is a concept that emerged in the late 1980s. It has been defined by Cross, Bazron Dennis, and Issacs as a “...a set of congruent behaviours, attitudes, and policies that come together in a system, agency, or among professionals that enable them to work effectively in cross-cultural situations” (1989, p. iv). This definition is also taken up in Lee, Cosby, and deBaca’s (2007, p. 3) more recent work and addresses Osborne’s (2001) concern relating to the importance of systems’ responsiveness not just teacher responsiveness. Lee et al. (2007) also see cultural competence as “ ...understanding one’s own identify and values, and how these influence one’s perceptions” evoking Cadzen and Leggett’s (1976) earlier conceptuatlizations. Applying this concept to teachers’ work and student

academic success, Lee et al. see cultural competence as requiring the “... knowledge, skills, experience and the ability to transform” (2007, p. 3) practice for improved outcomes.

Perso’s (2012) comprehensive review of cultural responsiveness and school education as they pertain to Aboriginal and Torres Strait Islander students, concludes that whilst there are varied interpretations of cultural competence in the literature, there is agreement that it is a “...*personal* capability comprised of attitudes, values and beliefs that develop over time through a *personal journey*.” (p. 20, emphasis added). This conceptualisation points to the importance of ongoing development of individual teacher dispositions and attributes as well as professional capabilities. This presents significant challenges in terms of developing teacher professional learning experiences which can address the personal as well as the professional in an ongoing and sustained way.

Socio-politically conscious teachers know the larger socio-political context of the school, community, nation, and world and have knowledge of the social and political realities in which they live (Gay & Kirkland, 2003; Ladson-Billings, 2001; Gay, 2000). Ross (2008) suggests that “...socio-political awareness is to be aware of the social construction of our own identities and that of our students and to realize that identity is shaped in cultural experiences” (p. 2) and that critically reflexive praxis, again resonant with Cazden and Leggatt (1976), is necessary to effect positive educational outcomes for culturally diverse children.

### **The Importance of Culturally Responsive Pedagogy for Refugee Children**

In the context of refugee children, not only are vital in assisting students achieve academic success, they have an important role in the resettlement process. Schools are “...a stabilizing feature in the unsettled lives of refugee students” (Matthews, 2008). Research into the

adjustment of refugee children shows that the provision of quality early educational experiences in schools, in particular, is crucial in how well children settle and integrate successfully. It is, therefore, important that schools and teachers are equipped for “...getting it right the first time” and are allowed to make appropriate judgements based on evidence rather than ideology or the common political agenda at the time (Rutter, 2006). In addition, literature both internationally and nationally agrees that developing proficiency in English is essential and critical to assist social cohesion, successful resettlement and wellbeing of refugee children (Hek, 2005b; Matthews, 2008; McBrien, 2005; Rutter, 2006). So, explicit teaching of English must be an important part of refugee children’s experiences.

Most research around refugee children in education focuses issues of trauma. Although this is significant, it has the capacity to unintentionally universalise and homogenise the refugee experience making it difficult for other programs and perspectives to take centre stage (Hek, 2005a; Matthews, 2008; Rutter, 2006). As stated earlier, the initial schooling experience is critical for overall success. However Taylor and Sidhu (2012) highlight that, while there is a growing population of refugee students in schools there are few examples of best practice and effective support for these students (Matthews, 2008; Pugh, Every & Hattam, 2012). This is a significant gap in the research.

One possible factor that impinges on the success of refugee students is that policy makers and institutions do not explicitly identify the needs of refugee students as different from economic migrants and First Nations people of Australia. Refugee students are subsumed into policy documents where it is difficult to identify anyone from a CALD (Culturally And Linguistically Diverse) background. As a result “...the discursive invisibility of refugees in policy and research has worked against their cultural, social and economic integration” (Taylor & Sidhu, 2012, p.

42). Rutter (2006) argues that the nature of such policies prevents a detailed examination of pre – migration and post – migration factors necessary to create programs that address the specific and distinctive needs of refugee children. Furthermore, increasing standardization of curriculum and assessment significantly and directly impact negatively on CALD students, including students with a refugee background (Pugh et al., 2012; Taylor, 2007).

In the UK, refugee children are still rarely identified as a distinct category with specific educational needs despite systemic recognition that “...learning is defined as the main path to integration” (Arnot, Pinson, & Candappa, 2013, p. 19). Similarly, Taylor’s 2007 study of policy and provision for refugee students in Australia identified that refugee students were “...rarely targeted with a specific policy. Instead, they were either conflated with other categories such as ESL students or not mentioned at all”. In the Queensland context as far back as 2007, there have been discussions around the exclusion of refugee students from educational policy documents and there appears to be a genuine attempt to include refugee children as a distinct group that schools and teachers need to consider when differentiating in the classroom. For example,

*Education and English language learning are critical to the successful settlement, development and wellbeing of Queensland’s refugee and CALD youth. On arrival in Australia refugee and CALD students confront challenges in education due to historical, environmental, cultural and social factors, resulting in barriers to accessible, equitable, quality education responsive to their needs.* (Muticultural Development Association, 2011, n.p.nos)

However, there is little guidance or impetus for teachers as to how the effect culturally responsive pedagogy in their classrooms.

## **Conclusions**

This paper has provided a critical review of current literature relating to culturally responsive pedagogy and the particular needs of refugee children in Australian schools. It has identified that there is little literature on how to implement these practices (Sleeter 2011a; Macfarlane, Glynn, Cavanagh & Bateman, 2007) but they are necessary both in terms of teacher professionalism and the *Australian Professional Standards for Teachers*, Standard 1 and for the academic success of the diverse groups of students. The personal and professional nature of culturally responsive pedagogy presents significant challenges for teacher education and ongoing professional learning. More research is needed into how to support teachers' culturally responsive capabilities in contexts of practice.

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# **Student-centred pedagogical reforms in Asian countries: Activity theory analysis of tensions, contradictions and hybrid practices**

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## **Abstract**

The present study, involving three lecturers and 150 university students in Vietnam, used third generation of activity theory, to document how a group of Vietnamese lecturers and students created bridging and hybrid strategies that maintained aspects of traditional teaching practices and introduced novel student-centred practices. When the bridging revisions were made, the students were evidenced to achieve a growth in learning, and engage more frequently in both reflective self-learning and collective learning.

**Keywords:** Asia; activity theory; student-centred; reform

## **Introduction**

Recently in many Asian countries, there is renewed interest among policy-makers in student-centred pedagogies both with regard to schooling systems and the university sector (Jensen, 2012). This is because policy makers in Asia have drawn upon research evidence suggesting that student-centred pedagogies enable learners to acquire relevant knowledge-economy attributes (Cooper et al.; Handelsman et al., 2004).

The shift to student-centred policies is widespread across Asia. Student-centred pedagogical ideals, however, are rarely implemented in a straightforward and consistent manner (Albright & Kramer-Dahl, 2009) because the policies both challenge ingrained teaching and learning practices, and conflict with other policy imperatives. Specifically, teachers in many Asian

nations prefer to maintain an expository style of teaching to ensure that their students perform well in high stakes tests to satisfy parental expectations (Li, 2009; Pham & Renshaw, 2014). Also, student-centredness places the student in the center of the learning where the teacher has the expertise but accepts that they can learn from students as well (Collins & O'Brien, 2003; McCombs & Whistler, 1997). However, Renshaw and Power (2003) argue that in Asia the sense of respect between children and adults predisposes the students to be diligent and receptive rather than creative and questioning the teacher. In addition, learner-centredness requires group discussions to be predominant practices (Blackie, Case & Jawitz, 2010), whereas Asian teachers seem still prefer the lecturing approach so that they can easily fill students with textbook knowledge that then helps students to succeed on textbook-based exams and international tests (Phuong-Mai, 2008; Gow & Kember, 1990).

Such cultural disparities have, to a great extent, hindered the effective implementation of student-centred pedagogies in many Asian countries. Researchers have found, for example, that new pedagogies transplanted from Western cultures are not sustained because they do not align well with the Asian cultural context (Chan, 2009). Therefore, rather than simply grafting Western pedagogical practices onto Asian teaching and learning traditions, Tsui and Wong (2009) emphasize that ideas borrowed from the West must be integrated both with Asian educational traditions and philosophies and with the situated experience of teachers. Gu (2003) advocated for the 'middle ground' in order to deal with mismatches and conflicts when "East meets West". This middle ground can be regarded as a 'third space' (Bhabha, 1994; Gutiérrez, Baquedano-López & Tejeda, 1999) or a 'boundary zone' as described by activity theorists (Konkola, 2001). It is the middle ground that teachers can develop transformed and hybrid practices that can be sustained in Asian classrooms.

Our design-based research study, therefore, drew upon Activity Theory to investigate how a group of Vietnamese lecturers and students adapted their pedagogical practices, taking into account both traditional practices and contemporary influences, to make student-centred pedagogies more feasible and effective in their classrooms. Specifically, the following questions were examined:

1. How did the lecturers adopt and transform student-centred pedagogies in the Vietnamese context?
2. How did the student-centred pedagogies influence student learning processes and outcomes?

## **Methodology**

### *Research design and participants*

The study was conducted within a design-based research methodology that sees the design process as cycles of planning, implementation, collection of evidence and revision. The participants were three lecturers and 150 students from a university in Vietnam. The participants worked on the same course but were divided into three classes with Lecturer A (very experienced) teaching the first class, Lecturer B (inexperienced) teaching the second class and the researcher teaching the third class.

### *Design*

The semester was divided into Term 1 and Term 2. In Term 1, the researcher played the role as the main designer of pedagogical activities. However, entering Term 2 this role was taken by Lecturer A (this shift was discussed in the later section on procedures of Term 2). Basically, in Term 1 all lessons were designed in a seminar format. The students were first given several

relevant journal articles beforehand. Then, in class, they were asked to use the "questioning formulation strategy" (Koch & Eckstein, 1991) to form questions to ask each other about the articles. They could post and discuss any questions that they might have on an online forum.

#### *Data collection*

Data were collected on: (i) students' performance on mid-term and final assignments; (ii) student and teacher interactions during small group activities as captured on audiotapes which were applied to three focus groups in each class; (iii) students' knowledge and understanding as revealed through online discussion forums; and (iv) evaluations and suggestions for improving the course as revealed through interviews with ten randomly-selected students from each class.

#### *Data analysis*

(i) Academic performance: All assignments were marked on a 10-point scale by the lecturers; (ii) The lecturers' verbal behaviours were identified based on three categories including demonstrating control; extending the activities; and mediating learning; (iii) Students' online discussions were analyzed and classified based on six dimensions of knowledge as described in Bloom's taxonomy; (iv) All interviews were analyzed based on content analytical procedures (Neuman, 2003).

### **Results**

#### *Term 1*

The student-centred lessons implemented in Term 1 were regarded as quite unsuccessful. The average mark across the three groups was 6.8 out of 10. Lecturer A explained that this result was lower than in previous years. Two main issues seen as the main reasons contributing to this



failure were 'the lack of scaffolding and guidance from lecturers' and 'the students' difficulty in developing higher-order knowledge'.

### *1. The lack of the lecturers' scaffolding and guidance*

The students revealed that although they appreciated the opportunity to tackle problems and work out solutions with peers, they lacked confidence in their capacity to cope by themselves. They still preferred the lecturers to provide timely intervention to guide them to understand what Gu (2003) called the 'knowledge points' (the main ideas of each lesson). The audiotaped data showed that the lecturers were engaged in 22 'Demonstrating control' verbal behaviours but in only 15 'Extending' and 18 'Mediating learning' behaviours.

### *2. The students' poor performance on higher-order knowledge*

The discussion of three online lessons reported that the students were involved in 66.7% of low-knowledge verbal interactions but only in 36.3% of higher-level knowledge interactions. This indicated that they were mainly concerned with trying to understand basic conceptual knowledge points rather than scaffolding each other to expand their knowledge beyond the texts. When analyzing how the students formulated questions to gauge each other's understanding of the readings, the results showed that the students could formulate 34 low-level testing knowledge questions but only 12 higher-order knowledge testing questions.

To sum up, in Term 1 the students did not work with student-centred activities as effectively as anticipated. They focused on understanding the basic conceptual knowledge rather than constructing complex knowledge beyond what was said in the texts. To improve this situation, at the start of Term 2 the lecturers organized several meetings to identify more effective pedagogical practices.

### *Modifications made in Term 2*

The need to implement modifications in Term 2 was not a surprise. As predicted by the theoretical framework of Activity Theory, the implementation process in Term 1 inevitably raised design challenges created by discontinuities for lecturers and students between old and new pedagogical practices, and tensions between students and lecturers regarding their respective roles and expectations about performance on assignments (Engestrom, 2001). In Term 2 Lecturer A took over the role of the main designer. This shift was made because the renovation initiated by the researcher in Term 1 was not successful. Also, Lecturer A was confident in her local experience to adjust the student-centred strategies in the way that included more direction, scaffolding and mandated activities. She thought these modifications would make the initiative more culturally appropriate to the students. So in Term 2 the following bridging strategies between established and novel pedagogies were made.

*1. Incorporate lecturing as a necessary part of each lesson*

Lecturer A emphasized that each lecturer needed to spend a portion of each lesson's time clarifying in a short lecture the 'knowledge points' that the students must obtain in each lesson (Gu, 2003). Also, when the students worked on the articles, they first needed to summarize key ideas of each article and pointed out how these key ideas were connected to theoretical concepts taught in lectures. These step-by-step procedures aimed to ensure that every group member had a sound understanding of the article so that their contributions in small group discussion would be more informed and thoughtful.

*2. The lecturers provided more guidance and scaffolding (but did not hold the students' hands) to help the students develop their complex knowledge.*

Lecturer A believed that the students could only achieve higher-order complex knowledge if they had clear understanding of basic conceptual knowledge and received scaffolding and detailed

guidance of the lecturers. Thus, in Term 2, the students were given the guided reciprocal peer questioning strategies originally developed by King (2002) to guide their formulation of questions. Regarding the online discussion, the lecturers should actively initiate the discussions, then the students were required to answer and built on each other's ideas to develop explanations to extend the discussion. The lecturers provided timely intervention to raise the level of thinking and encourage deeper understanding. These recommendations reinstated much more teacher direction, mandated processes for students to follow, and the centrality of key knowledge points for students to understand and learn for the assignment. These changes are similar to those identified by other researchers. For example, Tsui and Wong (2009) and Pham and Renshaw (2014) found that Asian students studied more effectively if they were provided with more detailed scaffolding and guidance.

### *3. Changed seminar-formatted lessons to well-structured student-centred lessons*

To encourage the students to enthusiastically engage in discussions both in class and on the online forum, Lecturer A suggested that lessons be structured with clear regulations that required the students to be involved and express their ideas verbally. Group members needed to take turn to share ideas both in in-class and online discussions. Also, to deepen the students' understanding systematically, the students should take turn to summarize highlighted themes emerging in each week's online discussion, then presented them in the following class.

## *Term 2*

## **Results**

### *1. The lecturers provided more scaffolding and guidance*

Clearly, the biggest change was that the lecturers provided much more detailed guidance to extend the students' points in group discussion. Specifically, there was an increase in the lecturers' "Extending the activities" (38% in Term 2 compared to 27% in Term 1) and "Mediating learning" (41% in Term 2 compared to 33% in Term1). By contrast, there was a decrease in "Demonstrating control" (21% in Term 2 compared to 40% in Term 1). This decrease might be related to the introduction of the lecturing section of the lesson that equipped the students with a good understanding of key concepts. Subsequently, when the lecturers monitored the students' discussion, they did not have to instruct or direct students as often but could focus on guiding the students to expand their understanding and seek knowledge beyond the texts. When interviewing the students at the end of Term 2, they generally expressed satisfaction with the amount of scaffolding and guidance the lecturers provided them.

## *2. The improvement in the students' higher-order complex knowledge*

The analysis of the students' group discussion revealed that the students increased the frequency of questions that gauged each other's complex knowledge. Specifically, in Term 2 the students could formulate almost the same number of each type of questions. However, when comparing these numbers to those in Term 1, it was found that there was a marked decrease in the number of low-level knowledge testing questions in Term 1 (34, equal 74% compared to 26, equal 48% in Term 2). By contrast, there was a dramatic increase in the number of higher-order knowledge testing questions in Term 1 (12, equal 26% compared to 28, equal 52% in Term 2).

The improvement in the students' focus on higher-order knowledge was also reflected in the number of verbal interactions classified as higher-order knowledge dimensions that the students were involved in on the online discussions. When comparing the type of verbal interactions in Term 2 with that in Term 1, it was found that in Term 2 the students were engaged in a smaller

percentage of lower-level verbal interactions (59,4% in Term 2 compared to 64,7% in Term 1). By contrast, they were involved in a higher percentage of the verbal interactions related to the higher-order knowledge dimensions (40.6% in Term 2 compared to 35.3% in Term 1). This shift indicated that toward the end of the semester the students were more focused on investigating and obtaining complex knowledge.

A t-test was then carried out to determine if there were differences in the students' achievement scores on the mid-term and final assignments. The results are presented in Table 1 below.

Table 1. T-test results in comparing means of the students' scores achieved on the two assignments

Assignments		t	p
Mid-term assignment	Final assignment		
M (SD)	M (SD)		
6.8(0.92)	7.3(1.12)	1.01	.03

The results in Table 1 showed that there was a significant difference on the two assignments suggesting that the students improved on their final assignment.

When interviewing the students, the researcher found that they highly valued the regulation of their interactions in class and online that Lecturer A has suggested for Term 2. They initially perceived these regulations as 'strict' and 'strange' but then appreciated the benefits regarding improvement in their performance on the final assignment.

## Discussion

Gu (2003) notes that Asian teachers tend to explicitly name the concepts that students will need to learn, specify the key aspects of the concepts related to the topic, and identify the aspects that students are likely to find most difficult. This common approach to teaching in Asia is consistent with our observations in the present study where lecturers wanted to adjust the lesson plans in Term 2 because they did not feel that they successfully helped the students understand key elements of each lesson in Term 1. Adjustments that Lecturer A initiated in Term 2 were also driven by the fact that both Lecturer A and B seemed very concerned about preparing the students to perform well on assessment. This coincides with what Li (2009) identified as the examination driven-system in Asian countries, regardless of the social or political system of the country. Teachers' reputation has been commonly measured by the success of students on exams (Phuong-Mai, 2009; Pham, 2014). Therefore, Pham and Renshaw (2014) claim that Asian teachers and students will support reform of teaching and learning practices if opportunities for improving examination results are at the forefront. If the reforms are not closely aligned with examinations, both teachers and students are somewhat resistant to change. The bridging pedagogical practices initiated by the lecturers show that while the lecturers were prepared to welcome activities that encourage students to "*learn from each other*", they did not give up the traditional goal of knowledge consolidation for examinations.

Of particular interest was the students' request after Term 1 for more scaffolding and guidance from lecturers. Both the lecturers and students reasoned and believed that without the lecturers' guidance, it was hard for the students to know how to obtain higher-order knowledge and perform well on examinations. This finding coincides with what Gu (2003) found regarding peer learning. While it might be regarded as valuable in terms of stimulating discussion, promoting

collaboration, and enhancing solidarity among peers, without expert guidance from the teacher or external specialists, students will resist engaging in peer-directed learning.

The hybrid pedagogical practices adopted by the lecturers in this study revealed that although they were concerned with guiding and scaffolding the students, they did also try to promote independent learning and reduce their role as the sole knowledge-provider. For example, Lecturer A ruled out various forms of assistance to force the students to help each other. She suggested that the lecturers should only interfere in correcting or scaffolding the students' complex knowledge when no one in the group contributed any new ideas. As such, the lecturers actually paid a great deal of importance to the careful planning of the scaffolding to be provided to students, on the basis of a deep understanding of the subject matter.

The lecturers continued to support a structured teaching approach throughout the current study. They fostered the students to achieve high levels of cognitive engagement by using both didactic and constructivist pedagogies. Lecturer A, for example, clearly structured what the students had to do in each lesson and insisted that they think and share their ideas. With her teaching experience over many years, Lecturer A was convinced that this process would eventually help the students synthesize diverse ideas, and develop deeper understanding of complex concepts. This aligns with findings reported by Chan (2009) when he found that compared to reciprocal teaching employed in Western classrooms, expert teachers in Asia adopted a much more structured scaffolding approach to engage students in searching for meaning and developing higher-order knowledge. Our study demonstrates the uptake of Western practices that requires cultural translation and local adaptation if it is to become an effective part of the education system in Asian societies. The data for this study reflected real-world scenarios and produced

practical strategies that were negotiated with teachers and students and were shown to improve engagement and learning.

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# **Assessment in teacher education: Leading change in schools' use of learning development data**

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## **Abstract**

The changing face of education over the past ten to twenty years has seen the introduction of large-scale standardized testing with the expectation that schools and classroom teachers improve student learning achievement. For this to be achieved there has been a call to action for greater understanding of theories of student learning along with new knowledge and skills. This call was the impetus for this case study that involved one school and the use of an on-line survey, individual and focus group interviews with members of the Administration and teachers to explore this issue. Results indicate that teachers do not consider that assessment helps learners know how to improve and indicated that there was a lack of clear direction or understanding in relation to the purpose of assessment. Findings from this study suggest that the way forward is for pre-service teacher education to establish clear understandings about how to judge student learning development.

## **Introduction**

Education plays a critical role in preparing national human resources that need to be responsive to changing conditions, and is therefore considered a high priority by concerned authorities in most developed countries (Lam, 2001). Consequently many developed countries that make up the membership of the Organisation for Economic Co-operation and Development (OECD, 2005), looked for mechanisms to examine their educational systems and to ensure economic efficiency and competitiveness was being achieved. This brought about the inception of

centralised assessment in the early 1990s for most countries. It was not until 2008 that Australia introduced the National Assessment Program Literacy and Numeracy (NAPLAN) which was the government's first step towards the introduction of a national curriculum and national accountability measures in education. This national data permits educational comparisons across states and some means for making conclusions and decisions nationally. The Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA, 2010) has endorsed target setting as a means of expressing aspirations and providing motivation, guidance, support and monitoring for continuous school and system improvement. These moves to improve efficiency and effectiveness in schools have impacted states, systems, schools and classroom teachers as increasing amounts of data from national assessment instruments are used to make comparisons about student, school, and state and territory performances.

This paper does not engage with the debate on whether high stakes national testing is appropriate or not. Rather this paper is concerned with the responsibility of assessment and reporting of the Australian Curriculum being devolved to each state and territory. Arguably, in such a data affected environment, it is the responsibility of principals and teachers to ensure that this data is of direct benefit to learning and teaching processes to support the achievement of national goals. As a result the following research question is the focus of this paper.

*How do teachers' judge student learning development?*

## **Literature Review**

The research literature surrounding teachers' understanding of judgement of learning is as 'messy' a construct as understanding teacher beliefs about learning (Pajares, 1992). Just as learning and teaching are not single entities, neither is judgement of learning. All are complex

and dynamic and need to be understood as integral to student learning (Earl, 2003). In much of the literature, judgement of learning is referred to as ‘assessment’ which is defined by the Victorian Government’s, Department of Education and Early Childhood Development (2014) as the “ongoing process of gathering, analysing and reflecting on evidence to make informed and consistent judgements to improve future student learning”.

As our knowledge and understanding of how students learn has deepened and expanded recently, it has been presumed by many that our understanding of making informed judgements about student learning development has also improved. Unfortunately, much of the literature reviewed maintains that the dominant theories and past models of assessment judgements about learning continue to operate as the default framework affecting and driving current practices and perspectives (Black & Wiliam, 1998). Assessment judgements of learning must tap into a broader range of competencies of the past and must also capture the more complex skills and deeper content knowledge reflected in new expectations for learning (Pellegrino et. al, 2001). It would stand to reason therefore, that assessment judgements would be consistent with new expectations of 21<sup>st</sup> century learning. However what is indicated in much of the literature reviewed, as Pellegrino et al. (2001) has noted, “It is only a slight exaggeration to describe the test theory that dominates educational measurement today as the application of 20th century statistics to 19th century psychology” (p. 25).

A review of research conducted by Black and Wiliam (1998) on the uses of assessment across many countries world-wide, identified low level assessment practices of many teachers where they encouraged only rote, or superficial learning, with little reflection about the appropriateness of the assessments used. They also found many cases where only summative assessment was

used to grade students with little emphasis upon progress of learning resulting in high levels of competitiveness between students rather than improved personal learning. Black and Wiliam did reveal however, significant gains in student learning through the use of assessment for formative purposes. When teachers' conceptions were more closely linked with the learning experiences of the students and how students' learn, their pedagogy reflected assessment as integral to the learning process. When students were actively involved in their own learning, teachers' goals shifted to helping students develop their own learning-to-learn skills (OECD, 2005). This notion is described by Hattie (2012) who refers to learning as being "visible". He maintains that when there is an explicit and transparent goal to be attained, both the teacher and student need to "seek ways aimed at attaining mastery of the goal" (p. 14). This Hattie (2012) maintains is "teachers seeing learning through the eyes of students and students seeing teaching as the key to their on-going learning" (p.14).

Judgement of learning also encompasses the overall outcome from an assessment event as the representation of an assessed person's knowledge, skill or understanding, i.e. the representation of their competence (Newton, 2007). It cannot be presumed that assessment judgements on their own can better meet the needs of student learning, however basing assessment on theories of learning that are aligned with curriculum and instruction, gives a far clearer indication of the strengths and weaknesses to support students' thinking and knowledge in a particular domain. "If assessment, curriculum, and instruction are aligned with common models of learning, then it follows that they will be aligned with each other" (Pellegrino et.al, 2001, p. 256).

There is a great deal of literature surrounding the lack of training and expertise of teachers in measuring and diagnosing student learning (Leighton et al., 2010); however, fundamentally assessment judgements of learning are inferences that are made by educators to estimate the

knowledge and performance of students' learning. This complex and dynamic process is best summarised by Pellegrino et al. (2004):

*Educators assess students to learn about what they know and can do, but assessments do not offer a direct pipeline into a student's mind. Assessing educational outcomes is not as straightforward as measuring height or weight; the attributes to be measured are mental representations and processes that are not outwardly visible. One must therefore draw inferences about what students know and can do on the basis of what one sees them say, do, or make in a handful of particular situations (p. 42).*

If “assessments do not offer a direct pipeline into a student's mind” as Pellegrino et al. (2004, p. 42) suggests then the question remains as to *how do teachers' judge student learning?*

## **Methodology**

The current study was situated within the theoretical framework of “symbolic interactionism” (Charon, 2007). This theoretical framework allows the researcher to focus on the perspective of key ‘actors’ in social situations (Stryker, 2003). In this study, the key actors were deemed to be the school principal, the Assistant to the Principal (APA) and the Curriculum Leader, along with classroom teachers in one Brisbane Catholic primary school. The study reported in this paper is part of a larger study that involved two stages of data collection, analysis and interpretation: “exploration” and “inspection” (Charon, 2007, p. 208). The exploration stage allowed for the construction of meaning about “what's going on around here” (Charon, 2007, p. 194), as well as to identify issues for further investigation during the inspection stage. This case study used a mixed methods (Creswell & Plano Clark, 2007) approach to data collection that included individual and group semi-structured interviews as well as the completion of a survey.

In the exploration stage, the Principal, APA and Curriculum Leader were interviewed. Analysis of this interview led to the development and validation of the Improving Student Learning Development Survey (ISLDS). Analysis of this survey data that was completed by nine of the twenty-two teachers in the school resulted in unresolved issues around teachers' judgement of learning and teachers' use of learning development data. These unresolved issues were taken into the investigation stage of the study where six teachers were interviewed in a focus group to provide clarity around these unresolved issues. The interpretation of the data from the teacher focus group interview informed follow up individual interviews with the Principal, APA and the Curriculum Leader. These data were then analysed to gain a deeper understanding and clarification of each of the research questions.

This two-stage data collection process was supported by a three step iterative process of data analysis termed as first, second and third order interpretation (Neuman, 2007, p. 160). The first-order interpretation is from the perspective of the participants being studied. The second-order interpretation stems from the perspective of the researcher, and involves eliciting the underlying coherence or sense of meaning in the data. Third-order interpretation involves the assigning of general theoretical significance to the data.

## **Results**

### *How do teachers' judge student learning development?*

In the exploration stage of the study, the Principal, Assistant to the Principal (APA) and the Curriculum Leader were interviewed in relation to the strategies they would expect teachers to use to judge that a student's learning was developing. The Principal had the expectation that teachers should use a range of strategies to assess student learning development through:



observations; anecdotal notes; running records; on-going data collection; the school's tracking tool; and formal and informal testing. The Curriculum Leader when interviewed had the following expectation:

*You need to know where they've started; to know whether you've had any improvements, so I would expect pre-testing of sorts to go on; that would be a strategy to employ. Whether that's a pen and paper, or verbal or a range of activities that you take notes on. So, some sort of pre-test and assessment. The strategy of being very clear about what it is we're learning or focusing on, so the students understand and are on the journey, so there are no secrets for them. I would expect one strategy being the feedback through the course of the project or course of study with dialogue between the student and the teacher.*

These views held by the Administration team in combination with the research literature informed the development of questions posed in the ISLDS. Analysis of the data gathered from the survey indicated some inconsistencies in the expectations of Administration and the teachers' responses in the survey. Teacher responses to the Item S1: *I use judgement of prior knowledge to know that a student's learning is developing* was rated a 10 on the Likert scale by only two teachers. In Item S17: *I use the writing of anecdotal notes to know that a student's learning is developing*; three teachers indicated a rating of 10 on the Likert scale, while one teacher indicated a 3. These responses highlighted that the teachers hold differing perceptions and that their perceptions may differ from the Administration as to the strategies that should be used to judge student learning development. The use of data throughout the learning process to judge whether a student's learning was developing was not highly regarded with only three teachers indicating a 10 for Item S10: *I use the collection of data throughout the learning process to know that a student's learning is developing*; and even fewer indicating that they use data to measure

the degree of progress. Teacher responses also indicated that the use of data to judge learning development was not considered a priority across the school. Four of the eight teacher responses indicated that data was used across the school to inform teaching and learning, whilst only one teacher rated this as a 10 on the Likert scale indicating that he/she believed teachers across the school use the comparing of post- testing data with pre-testing data to know that students' learning is developing. This is in conflict with the Administration team's perspective that there was an expectation that teachers use data to judge student learning development. It also indicates that whilst some data collection is occurring, there is limited evidence that teachers are analysing and interpreting pre and post data to inform subsequent teaching and learning.

Teachers also disendorsed students' input as integral to determining the improvement or development of their own learning. Strategies such as student self-reflection; self-evaluation or self-regulation received low ratings on the Likert scale. Teachers also indicated on the ISLDS that providing feedback to students with specific direction for improvement was not a priority in their teaching. These findings contradict the perspective held by the Curriculum Leader in her initial interview. Teachers also indicated that they did not consider diagnosis of student learning difficulties to know that students' learning is developing as significant in the frequency analysis.

The inspection stage sought responses to further clarify the unresolved issues indicated in the exploration stage of the study. Whilst there was some indication of the use of formative assessment and the need to give feedback to students, the remaining responses indicated that teachers' considered the purpose of assessment was to inform 'them' of student learning development. The teachers in the focus group interview confirmed the perspective identified in

the survey by failing to mention or suggest that students should be an integral part of the process through self-reflection, evaluation, monitoring or regulating their own learning.

The proceeding interviews with members of the Administration team sought to further clarify the issue. The APA, when asked if she believed that the teachers were clear about the purpose and use of assessment in the school, she stated, *“In a perfect world, yes, but probably not, because in our vision, it’s not that specific. We aren’t quite that specific, but we do have those expectations and we do check in on teachers”*. The Curriculum Leader confirmed this lack of clear direction or understanding surrounding the schools’ vision in relation to the purpose of assessment. She explained,

*In terms of clear assessment practices being articulated - I think they’re unspoken. We talk about it, but there’s not a statement anywhere that says we use it for this and we use it for that. There’s certainly a lot of discussion and maybe it’s an implied expectation because it’s not written down in terms of we’ll need to do this and you need to do that.*

The Curriculum Leader also indicated that teachers did always align assessment to the achievement standards or content descriptors of the Australian Curriculum. She recognised the need for teachers to understand the purpose of assessment and confirmed this by stating, *“If it doesn’t have a purpose, unless it’s for teachers to learn about their students earlier in the year, then why would you do it”?*

## **Discussion**

The context of this study explores teachers’ current understanding of assessment and judgement of student learning. While judgement of learning is seen to be a ‘messy’ construct we need to understand it as it is integral to student learning (Earl, 2003). This research, confirms what has

been identified in the literature that the dominant theories and past models of assessment judgements about learning continue to operate as the default framework affecting and driving current practices and perspectives (Shephard, 2000). The question as to why, can be attributed to one of the most significant factors attributing to the current demands on assessment judgements and the use of data has been brought about by the high priority authorities place upon large-scale standardised testing in most developed countries (Lam, 2000). There exists the expectation that testing leads to continuous student improvement. This may not necessarily be the case if we accept that the emphasis of test theory dominating educational measurement today is the ‘application of 20th century statistics to 19th century psychology’ (Pellegrino et al., 2001, p. 25).

Although this study cannot be generalised to the full Australian context, it provides some insights into the understanding, knowledge and skills of teachers and School Administration in relation to the judgements made to ascertain student learning development. This study provides evidence from teachers and administrators that they do not hold clear and consistent understandings of assessment nor do they hold adequate data literacy skills and assessment knowledge. Teachers were unable to indicate a clear understanding of the use of a variety of strategies to judge the development of student learning. There was also no evidence in the study to suggest that judgement of student learning or the analysis and interpretation of data to provide evidence of learning was used to inform students of their own learning development. Consistent with Mandinach’s (2012) research, this study confirms that teachers in this study demonstrated limited understanding of how their pedagogical content knowledge could assist them to judge student learning development through the use of assessment.

## **Conclusion**

Whilst the issue of how teachers judge student learning development is a complex one, there are many suggested pathways to implement change in the education sector. Some of these include teacher professional learning to improve data literacy; the continuing development of technological tools to support data systems; providing time and opportunities for teachers to work collaboratively to analyse and interpret data; and to establishing a shared vision for the use of data across the school. There is however one pathway suggested by Mandinach and Gummer (2013), that “educators need multiple experiences to develop data literacy across their careers, from pre-service preparation throughout their career-long development of expertise” (p. 31). This is supported by the findings from this study, however, more importantly; the way forward is for pre-service teacher education to establish clear understandings about how to judge student learning development. A set of core principles of learning are needed to underpin teacher practice as it is from this knowledge and understanding that assessment and the use of data can be authentically integrated into learning and teaching. This notion needs therefore, to be considered a priority for academics engaged in pre-service teacher education.

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# **Listening to pre-service teachers: Social relationships and democracy in ICT-embedded classrooms**

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## **Abstract**

This paper explores pre-service teachers' perceptions on the impact of ICT on classroom social relationships and democracy in primary schools. The interpretation of pre-service teachers' perceptions is based on their practicum experiences. This study is consistent with a large body of literature which demonstrates relations between ICT and positive teacher- student relationship (e.g. Cooper, 2011; Moyle, 2010; Wang, 2013). Additionally, this study supports the view that ICT has the potential to enhance classroom democracy. For example, technologically competent students can share some 'teaching' work in the classroom if their teachers value their equal participations of classroom interactions. In this context, ICT may also promote collaborative student-student relationships as students have more opportunities to work together, for instance, producing a digital product in a group. This study collects data in two phases. The first phase involves an open-ended online survey, and the second phase involves a focus group interview. Open-ended questions are asked with the intention of letting pre-service teachers express themselves freely regarding their practicum experiences and perceptions of social relationships and democracy in ICT-embedded classrooms.

## **Introduction**

In the 21st century, digital technology is an integral part of children's daily life (Robertson & Al-Zahrani, 2012; Valentine, Holloway, & Bingham, 2002). In this paper, digital technologies specifically refer to informational communication technologies (ICT) which include digital devices and applications for the purpose of educational communications. According to the stated policies of teacher education, teachers in many countries are required to utilise relevant pedagogies in order to transform classroom practices through updating ICT without



compromising the supports to students (BECTA, 2004; Gill & Dalgarno, 2010; Webb, 2007). However, the complexity of classroom environments, which are embedded with various technologies, has challenged teachers' professional skills. In fact, current literature regarding teachers' professional development has also addressed the importance of pre-service teachers' experiences of pedagogical use of ICT (Barak, 2013; Choy, Wong, Goh, & LingLow, 2013; Ghanaguru & Rao, 2013; Jones, 2012; Milton & Vozzo, 2013; Wang, 2013). Based on this line of thought, the current study sets out to interpret how pre-service teachers perceive the impact of ICT on social relationships and democracy in primary school classrooms. Pre-service teachers' perceptions in this study not only reflect their prior experiences as primary school students and their current positions as student teachers, but also imply their expectations of how ICT can be used in their future teaching.

## **Background**

In a traditional non-technology-equipped classroom, the teacher has the dominant role and more likely to organize didactic classroom activities that are teacher-centered (Kumpulainen & Wray, 2012). However, this type of teacher-centered classroom is less valuable and has received criticisms (Jonassen, 2000; Jonassen & Reeves, 1996; Pedersen & Liu, 2003; Sadeghi, Ketabi, Tavakoli, & Sadeghi, 2012). The central viewpoint of these criticisms is the belief that traditional teacher-centered classrooms emphasize on facts memorization instead of knowledge construction. In fact, more than three decades ago, learning theorists such as Piaget (1977) and Vygotsky (1978) pointed out that one of the crucial point of learning effectiveness and productiveness is that of students take active responsibility for their study. In addition, Rogers and Freiberg's (1994) ideas about person-centred learning has contributed to the educational debate about students' central roles in the teaching and learning process. The consistent

conception of these debates is that teachers would need to value students' own responsibility of their study and their active role in the classroom.

Based on these criticisms, Moyle (2010) suggests that integrating technologies into the classroom affords opportunities to shift a teacher-centered approach to a student-centered classroom, which places students' needs as the focus. Among these needs, students' desire to use digital technologies in learning is highly valued (Australian Bureau of Statistics, 2011; Sadeghi et al., 2012; Williamson, 2012). Hence, to meet students' needs and interests in learning with technologies, teachers may need to consider how to prepare students to become active participants in a democratic environment (Crowe, 2006). The central notion of such consideration is to value students' equal participation in classroom interactions. In other words, it is to value students' contributions to the effective dynamics and learning outcomes (Spooner-Lane, 2013). A democratic environment includes shared respect, trust, and equality among stakeholders in the educational community (Spooner-Lane, 2013). Hence, democracy is an ideal status in education, which requires efforts of all stakeholders of school communities.

In ICT-embedded learning tasks, some students can be the 'experts' in some areas of technologies (Cooper, 2011). A grasp of technology skills gives them feelings of efficacy and power. Cooper (2011) also argues computers can "improve the power relationship in classrooms and can reduce the talk and domination of the teacher, making learning more active" (p. 207). For example, since interactive whiteboards and iPads are used in many primary schools, students are excited by the multi-sensory nature of interaction with these kinds of digital devices through finger touch. Students gain autonomy and self-satisfaction by working with the interactive programs.

Whilst ICT has the potential to enable teachers to create a meaningful classroom environment (Nelson, Christopher, & Mims, 2009) so as to attract students, its rapid development has become a challenge for teachers. Because teachers are not automatically tuned into effective teaching methods (Ng, Karacapilidis, & Raisinghani, 2012); they also need to equip themselves with ICT-related pedagogies. For instance, they would need to pedagogically consider how ICT can generate and change the emotions of students in classroom interactions.

### **Methodology**

The current paper is based on a PhD project, which aims to explore pre-service teachers' practicum experiences of using ICT in classroom interactions. One domain of classroom interactions conceptualised in the project is the emotional support (Hamre, Pianta, Mashburn, & Downer, 2007; Pianta, La Paro, & Hamre, 2008). The central inquiry in this domain was "how do pre-service teachers perceive the use of ICT in emotional support in classroom interactions according to their practicum experiences?" Two manifestations of the emotional support are presented in this paper, which are social relationship (Murray & Greenberg, 2006; Pianta, 2006) and democracy (Apple & Beane, 2007; Crowe, 2006; Moyle, 2014). This paper extracts data from the exploration of these two dimensions. Accordingly, it only presents pre-service teachers' reflections that are related to these two dimensions. The following sub-sections elaborate the rationale of this study's design.

### *Paradigm*

This study is undertaken within the interpretive/constructivist paradigm (Mertens, 2010) where the perceptions of pre-service teachers are central. The interpretive/constructivist paradigm was chosen because it reflects an attempt to interpret human's perceptions according to their particular experiences in a particular context. To be more specific, such paradigm aligns with this

study, aiming to explore the emotional support as affected by 'ICT' that are experienced and perceived in a subjective manner by participating pre-service teachers.

#### *Case study approach*

This study also employs a phenomenological case study approach (Yin, 2009). The choice of a case study mainly depends on the desire to seek an extensive and deep description of a complex social phenomena (Yin, 2009), which is the emotional support that embedded in ICT-rich classroom interactions. The 'case' in this study is the third and fourth year of pre-service teachers studying primary school program in one Australian university, where there are 8 male and 46 female students.

#### *Qualitative data collection*

Data collection for this study was divided into two phases. The two-phase data collection uses qualitative methods, which are appropriate as this research investigates how people (pre-service teachers) make meanings of their experiences in a specific phenomenon. Qualitative methods are also a good fit for the researcher's personal situation as an international student conducting an Australian context project.

An open-ended online survey was posted through the research software Qualtrics. This survey comprises two open questions, to allow pre-service teachers to reflect freely on their practicum experiences regarding the use of ICT in classroom interactions. Participants in the survey were also invited to reflect their own primary schoolings regarding the use of ICT. 42 participants responded to the survey.

The second phase was a follow-up focus group interview, which was an in depth exploration of the impact of ICT on the dimensions of classroom interactions. As noted earlier, only two dimensions are presented in this paper. Eight third-year pre-service teachers attended this focus

group. These eight pre-service teachers had just completed their three-week practicums in local primary schools several days before the focus group was conducted. Coded data and emergent themes relied heavily on their experiences, understandings, attitudes, and actions.

### **Findings and Interpretation**

This study employs thematic and content analysis methods. The three coded indicators of social relationship include teacher-student relationship, student-student relationship, and teacher-student collaboration. The six coded indicators for classroom democracy include: student-initiated interaction, giving students' freedom, giving students' chances of expressing themselves, regarding students' needs, personalization, and classroom authority balance. The following two subsections elaborate these indicators in ICT-embedded classroom interactions.

#### *The impact of ICT on social relationship*

For those teachers who have a passion for ICT, integrating ICT into classroom activities may seem easy. Their attitude towards ICT and embedded emotions while using technologies also affect students' performances in classroom interactions (Stephens, 2012). The following description is a supporting example from one participant of the online survey:

*ICT gives teachers interests which can be shared among students. With other teachers' cooperation, you [teachers] bring your [their] interests into classrooms which engage students more and students love this kind of passion of teachers.*

The underlying strategy in the above example reflects both teachers' and students' feelings about using technologies. In addition, as Beauchamp (2013) claims, ICT enables teachers to plan more interactive activities to engage students, which subsequently allows more interactions between teachers and students. Within interactions with students, some teachers are aware of the beneficial aspects of ICT and use them to motivate students, because they believe that specific technological resources “*highly engage students into the learning objectives while having the*

*students interact in a positive manner with both teachers and peers”* (online survey finding). Although only a few pre-service teachers in this study mentioned such kind of positive impact of ICT on students’ manners, the majority of them believe that ICT has the potential to build a positive teacher-student relationship. This is because interactive technologies can provide chances for teachers to share responsibility with students in learning.

Sometimes students can help teachers solve technical problems. One pre-service teacher participating in the online survey reflected that it is a great chance for teachers and students to build a positive relationship through learning from each other about ICT. In fact, when students had the chance to help their teachers, they felt privileged. Students felt that they were valued by their teachers, which would encourage them to actively interact with teachers and other students. Such interactions enable a collaborative relationship between the teacher and students. The following is an example from one participant of the online survey:

*[teachers] using technology [with students] is either by allowing them to assist me when using the IWB [Interactive Whiteboards] or having them help me when I might be "stuck" with a problem.*

Still, a number of participating pre-service teachers noticed that some teachers were reluctant to use technologies. The following response is an example from the online survey:

*I noticed a teacher who is anxious and may have negative feelings about technology. She tried to avoid technology as much as she could. I talked to her and found she also did not believe that students can benefit from technology.*

Other participants in the focus group also had similar experiences. Reasons for teachers’ reluctance are complex but the most mentioned ones in both literature and this study are teachers’ confidence in their own technological skills and their pedagogical knowledge of

integrating technologies (Jones, 2012; Sadaf, Newby, & Ertmer, 2012). Teachers' emotional reluctance may affect their technology adoption, students' opportunities of using technologies, and ultimately the classroom democracy.

According to the above discussion, positive classroom social relationships and democracy are interrelated. Positive teacher-student relationships are the heart of the democratic classroom (Spooner-Lane, 2013). Teacher-student relationships may be progressively changing if students are receptive and motivated to learn in a classroom environment with ICT (McGrath, 1998). Through ICT-embedded interactions, teachers and students could explore and learn together. Students can teach teachers some technological skills. Students can also work independently through interacting with digital devices and software. This would also allow teachers more time to be able to support and communicate with individual students (Cooper & Brna, 2002). In this sense, ICT is one of the most important provoking factors that potentially build a positive teacher-student relationship.

Furthermore, the interactive activities also enable students more opportunities to work collaboratively with peers. They help each other or bring out their personal skills in the group work. For example, one participating pre-service teacher in focus group reflected that:

*ICT takes away the competition factor [among students] such as 'I am so much better than you'... They are totally confident and believe that they can succeed without competition.*

Other participants in the focus group also agreed with this reflection. What lies behind this comment is their beliefs that ICT promotes students' confidence. Their confidence may come from their adequate use of technologies at home. Their feelings of relatedness and confidence are especially obvious when their teachers allow them to do some ICT-embedded tasks that they

normally do at home. This way of relating students' classroom activities to their home experiences is also an effective strategy to build a democratic classroom climate.

### *The impact of ICT on classroom democracy*

Originally, the word 'democratic' is from the phrase 'democratic education', which addresses the key question, "Who are having the authority in the classroom?" (McGrath, 1998; Spooner-Lane, 2013). As noted earlier, In ICT-rich classrooms, some ICT competent students may act as authority in the group. These students can teach other students some aspects of technologies and even teach their teachers (Walsh, 2011). In this sense, ICT has the potential to change the 'balance of power' (McGrath, 1998) and the way students learn (Thompson, Schmidt, & Davis, 2003) in the classroom. The most frequently used word by pre-service teachers in this study is 'voice' when they were reflecting the authority balance. The majority of them believe that teachers are not the only source of authority knowledge in the classroom. Students may get information and learn from the internet or their peers. For example, two pre-service teachers in the online survey provided their reflections:

*They [students] love technology and it is another way to get a message across rather than listening to the teachers' voice all the time.*

*When I was in grade 5-6 classroom [as a pre-service teacher], they had three weeks to do research project, at the end, they had to teach their class what they had learnt, so they are becoming experts and also making resources that other students could use as well to learn more. A lot of them use ICT to make PowerPoint not only to get information but also to share with others.*

Classroom dynamics in the above description is different from those of traditional book-culture classrooms where teachers are the only source of 'knowledge' and 'information' (Kress, 2003;



Kumpulainen, Hmelo-Silver, & Cesar, 2009). The key difference is student's active participation and construction of their learning. In turn, students are taking an active role in their own learning. In this sense, due to the technological advancements, building a democratic classroom climate which values students' voice has become a high priority in the process of educational transformation.

In this context, ICT distributes some authority power of teachers and enables students' relatively equal participation of classroom interactions. In other words, ICT has the potential to create an inclusive classroom climate (Kumpulainen & Wray, 2012; Wang, 2013) because it may help teachers to include more active participants in classroom interactions. Teachers could invite subject experts and students from other schools through video conferences. Moreover, ICT can help teachers to include those students who have learning disabilities and who are shy in face-to-face interactions. The following description is one pre-service teacher's corresponding response:

*Students are typing things up that they would not verbalise, students who are withdrawn from the classroom have started new interactions through Edmodo. They are talking to their teachers and other students. They are starting conversations that would have never taken place without the use of ICT.*

However, as Lai and Kritsonis (2006) claimed, participating pre-service teachers also raised their concerns that ICT might potentially exclude those students who do not have enough chance to use ICT at home. These students may feel anxious when their peers are proficient in using technologies. The positive side of this 'exclusion' is that these students could receive help from teachers and peers at school. A number of participating pre-service teachers noticed that technological competent students help those students who did not use technologies much at home without discrimination. In fact, educators and policy makers have been making efforts to

include more disadvantaged students who are from low income family having limited chances of using technologies compared to their peers (Geer & Sweeney, 2012; Loreman, Deppeler, & Harvey, 2010; O'Hara, 2011). These efforts need to continue to include more children in digital learning to promote their social and emotional well-beings.

## **Discussion and Conclusion**

This paper explores how pre-service teachers perceive the social relationships and democracy in ICT-embedded classrooms. What has been discussed in above sections demonstrates that ICT has the potential to build a positive teacher-student relationship, a collaborative student-student relationship, and a democratic classroom climate. The discussion above provides a useful 'window' for the exploration of the inclusive education influenced by ICT. Although ICT enables opportunities for teachers to build a democratic classroom, the critical point of the enabling is teachers' own value of 'democracy'. Teachers remain the initiators of the classroom climate, who make the decision to value students' participations, to regard students' needs, and to create opportunities for students' to take active responsibility of their study.

This paper and the PhD project, on which this paper is based are not trying to contest any opinions, but to identify implications for further examination. This study also does not intend to examine success factors of using technologies, but to value pre-service teachers' voices of how ICT affects teacher-student relationship, student-student relationship, and classroom democracy. This study may also have implications on how pre-service teachers can be pedagogically better prepared for future teaching in primary schools.

Finally, although this study reports a number of positive aspects of ICT on classroom social relationships and democracy, pre-service teachers also revealed several other concerns of using technologies such as teachers' lack of technological confidence or corresponding pedagogy,

students' safety well-beings on the internet, and the education inequality caused by family's social and economic status. Future research needs to address these issues in more details.

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# **It's a Science party! School and community learning partnerships promoting learning through Science**

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## **Abstract**

Confronted with the challenge of how to inspire students to opt into studying science at senior level, a team of educators devised a series of shared science learning activities. These activities were conducted within a community of practice that involved four specialist science pre-service teachers (PSTs) working with a class of Year 7 accelerated science program students under the supervision of experienced Science teachers. Collectively, the PSTs and the Year 7 students developed a series of engaging science activities, featuring a 'Science Party', that was to be conducted during Science Specialism Week 2013. Students from the Secondary College's feeder primary schools and scientists from the local community were invited. The event enabled learning to be facilitated across three levels of education; tertiary, secondary and primary, across several institutions; the university, the secondary college and its primary feeder schools, and the wider community.

This paper will demonstrate several important considerations for establishing and conducting a partnership project and the positive outcomes that can follow for participants. Qualitative data drawn from personal observations and reflections throughout the project, and reflective feedback from pre-service teachers and school staff, is examined to outline the benefits and the issues related to running such a project. An argument is advanced that partnerships between schools, communities and teacher education institutions can provide powerful learning opportunities for all involved, especially pre-service teachers, and in this case, students from secondary and primary schools

**Keywords:** transformational partnerships; pre-service teacher education; theory practice nexus; authentic learning

## **Introduction**

In the current education climate considerable attention is focused on developing closer relationships between schools, universities and communities to enhance learning for pre-service teachers (PSTs), teachers, teacher educators and students. In addition, the government is striving to improve teacher education and preparation for mathematics and science teachers (Chubb, Findlay, Du, Burmester, & Kusa, 2012; Office of Learning and Teaching, 2013; Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, 2013; Department of Industry, Innovation, Science, Research and Tertiary Education, 2012). These two factors underpinned a plan to establish and maintain a mutually beneficial relationship that focused on the teaching of Science between the University of Ballarat (UB), (now Federation University Australia), and an outer suburban Victorian state secondary school. The school had just finished building a new specialist science learning space and was keen to use the facility to bring their feeder primary school and their local community together to engage with science and to explore its importance in society. Furthermore the school was interested in accessing university expertise for professional development for their teaching staff. Ultimately, the underlying aim was to promote senior science to secondary students as a useful, relevant and achievable pathway in their education. The University was also looking to set up partner schools for focused and productive professional placement opportunities. From the university perspective, the partnership provided an opportunity for PSTs to engage in an innovative project where they could make connections between university theory and practical teaching in a secondary school.

Ensuing discussions about what might be possible between the school and the university saw the emergence of the Science Party idea. The concept would allow the secondary school students to engage in some fascinating science activities whilst also covering the requirements of the curriculum in a more holistic way. The school was also able to showcase its new facilities and offer science and transition opportunities to its feeder primary school students and teachers. It provided the opportunity for PSTs to collaborate in a team environment and work closely with secondary students to plan, teach, facilitate and reflect on the different aspects of the project as well as teach in a traditional Science classroom environment.

It was decided that the four PSTs would teach at the school for five weeks. The PSTs who were enrolled in the Graduate Diploma of Education (Secondary) course were placed in the school for 25 days as part of their required 45 professional experience days. They would involve themselves in the normal life of the school and teach in the existing traditional subjects and timetable structures as well as the Science Party project.

### **Theoretical Underpinning**

This paper is written as my (Wines) professional reflection and, hence, a self-study methodology is adopted. My co-author, (Burke) who participated in the initial concept meetings with the secondary school has adopted the role of a 'sceptical colleague' (Pinnegar & Hamilton, 2009, p. 113) acting as a sounding board for my reflection as the teacher-practitioner whose pre-service teachers were involved in the Science Party project. A self-study methodology is considered to be a 'natural progression from the concept of reflective practice' according to Loughran and Russell (2002), and has the potential to provide 'powerful insights', (Russell, 2010) into my own practice as a teacher. A self-study is reflexive in nature 'by a particularly reflective knower'

(Bass, Anderson-Patton & Allender, 2002, p. 56) and is specific to a particular teaching context. The self-study outlined in this paper is specific to the context of the Science Party learning project that was conducted with the PSTs as part of their discipline specialism courses in Science Curriculum, Senior Science Curriculum and their Professional Experience courses.

I was excited about the possibilities within the partnership as I have a personal interest in innovative teaching and learning practices that explore ways to achieve relevant, powerful learning for all students (secondary and tertiary) involved. This interest is highlighted by my unique position within the Faculty of Education and Arts where I am employed within a partnership between a local secondary college and Federation University. This arrangement sees me teaching classes in both institutions as part of my regular workload. The Science Party concept provided the scope for my students to explore ways to teach the AusVELS Curriculum outcomes as well as to put into practice their learning about teaching from university. Zeichner (2010) describes education programs, which bring together school and university-based teacher educators with practitioner and academic knowledge in new ways, as hybrid spaces or ‘third spaces’ in pre-service teacher education. The partnership, described in this paper, provided a hybrid space for transformational learning that had the potential to bridge the theory-practice divide for my PSTs.

University involvement in schools often involves transactional relationships, particularly with respect to practicum arrangements. In a conventional practicum PSTs work alongside a practicing teacher with the aim of eventually taking over the teaching of their classes. I was interested in developing a transformative program that fostered PST professional learning whilst offering multiple learning opportunities to the broader educational community and learning experiences that value-added to the school curriculum.

Berry and Loughran (2002) acknowledge that authentic learning opportunities are important in facilitating pedagogical learning. These authors state that ‘learning about teaching must be imbedded within meaningful experiences if such learning is to be more than a search for a recipe or the simple use of learning procedure’ (p. 28). This premise underpins the design of the Science Party learning experience for the PSTs and for the secondary students. Constructivist learning principles that emphasise ‘the growth of the prospective teacher through experiences, reflection and self-examination’ (McIntyre, Byrd & Foxx, 1996, pp. 171-172) provide the foundation for the pedagogical approach in this project. Within a constructivist learning program ‘significant education must present learners with relevant problematic situations in which the learner can manipulate objects to see what happens, to question what is already known, to compare their findings and assumptions with those of others, and to search for their own answers’ (McIntyre, Byrd & Foxx, 1996, p. 172). The Science party idea was presented to the PSTs as a problematic situation that was expected to allow them to probe, question and make decisions that contribute to their professional growth and learning (Burke & Goriss-Hunter, 2012; Burke & Goriss-Hunter, 2103; Burke & Wheatland, 2011)

## **Project Design**

During their professional placement each PST worked with a small group of around eight students Year 7 students as well as having an overall organization role. The goal was to provide “Science Party” days where the primary school students would be immersed in a day of science activities, run by the Year 7 students under the guidance of the PSTs. There were also other events planned by the school for this “Science Specialism Week”. These included a “Speed date a scientist” session for Year 10 students to consider science as a career and to identify the breadth of job opportunities in the science field. A science talent search poster competition also

saw students at primary and secondary level carry out a scientific investigation and present their results as a poster. A team of people including the PSTs and lecturers from the university took part in the “Speed date a scientist” session and in the judging of the Talent Search. Dr Roslyn Prinsley, National Advisor, Maths and Science Education and Industry, as a special guest, attended on behalf of the Chief Scientist, Ian Chubb.

Qualitative data was drawn from my personal observations and reflections during the project. Reflective feedback from pre-service teachers throughout the project as well as during a post placement focus group discussion was collected. Discussions with school staff from the primary and secondary schools also informed my reflections.

Planning for the Science Party took place between the PSTs and myself as lecturer, in the Science Curriculum class at university and involved collaborative brainstorming of possibilities for the activities and how they would prepare the Year 7 students to conduct them. The PSTs were taught the principles of ‘scaffolding student learning’ (Hogan, & Pressley, 1997). On placement in the school, they were supported by the Year 7 classroom teacher as well as the overall science co-ordinator and myself as the university-based mentor teacher. The PSTs worked with the class over four weeks to prepare for the Science Party, planned for the fifth week of the placement. This preparation involved investigating the selected science activities such as exploding hydrogen balloons, making bubbles, investigating liquid nitrogen, and making elephants’ toothpaste and slime. The Year 7 students, under the guidance of the PSTs, were expected to investigate, theoretically and practically, the science behind the activities, the optimum conditions for maximum “wow factor” for the participants and the safety requirements to run the activity. They needed to plan and produce a running sheet for the day. They also had to consult with the Laboratory Technician to organize equipment. The activities were based around

AusVELS and offered an alternative approach to learning traditional science. The PSTs reflected daily on what was happening in the classrooms, individually as well as collaboratively around their staff room table, sometimes with their mentor teachers and at other times with their university-based mentor teacher. After the PSTs returned to the university a debriefing session was held with the university mentor using a Plus, Minus, Interesting (PMI) routine, although an extra section, 'Implications', was added to focus on improvements for the future.

As the Science curriculum lecturer, my role in planning and organizing the event as well as mentoring the PSTs and participating in the Science Specialisation week activities enabled me to continually reflect on what was happening and the effect of such an experience on the PSTs. Through group discussions during the project, and individual and group reflections after the project, I was able to understand more about the importance of these partnerships in enabling quality learning for the participants. It became obvious to me how important such transformational partnerships are for teacher and student growth.

## **Results and Discussion**

The PSTs collectively acknowledged in the post-placement debrief session that the placement had facilitated a valuable learning experience for all involved. They said that they had gained confidence through their ownership of the project and the opportunity to trial their own ideas in a supportive environment and see these ideas through from start to finish. They saw that working as a team contributed to their development and confidence as a teacher. These outcomes relate significantly to how the conditions for learning can be supported and nourished in a third space.

At the school, I observed the PSTs taking on their roles as educators in a harmonious, collaborative way with the Year 7 students and their primary school guests. In the small group



situation they were able to develop strong relationships with their students, indicated by their use of names and their assigning of tasks to their students. Active scaffolding of the students to carry out tasks occurred due to the PSTs seeing the “big picture” better than the students. Advanced problem solving strategies were modeled that appeared to make sense to the Year 7 students due to the relevance and immediacy of the situation. I observed all members of the community of learners working together towards a common goal to make the event successful. The different sector educators observed, participated and learnt from each other. If an issue arose, it was reassuring to see the commitment of students, PSTs and teachers in collaborating to seek a solution. An example is when the “slime” recipe didn’t work as expected. The PST, rather than taking over, scaffolded the students’ learning using a visible thinking routine to consider possible reasons and then isolate how to correct the recipe. Tertiary, secondary and primary educators and students were all witnessing this in action and engaging in the learning process of problem solving.

The PSTs explored alternative ways of teaching to successfully cover the AusVELS curriculum in a relevant, meaningful and authentic way. The curriculum is organized in three strands as outlined in the statement in Table 1. I have underlined the sections in the table that indicate where the Science Party allowed students to engage positively in each of the three AusVELS strands.

Table 1. Overview AusVELS: Strands and dimensions (adapted from VCAA, 2014a)

Strand	Outline
<b>Physical, Personal and Social Learning</b>	Students learn about themselves and their place in society. They learn how to stay healthy and active. <u>Students develop skills in building social relationships and working with others. They take responsibility for their learning, and learn about their rights and responsibilities as global citizens.</u>
<b>Discipline-based Learning</b>	<u>Students learn the knowledge, skills and behaviours in the</u> arts, English, humanities, <u>mathematics, science</u> and other languages.
<b>Interdisciplinary Learning</b>	<u>Students explore different ways of thinking, solving problems and communicating. They learn to use a range of technologies to plan, analyse, evaluate and present their work. Students learn about creativity, design principles and processes.</u>

In terms of the Science Discipline based learning strand, there are three more interrelated strands. These are outlined in Table 2.

Table 2. AusVELS, Science Discipline content structure. (adapted from VCAA, 2014b)

<b>Strand</b>	<b>Elaboration</b>
<b>Science Understanding</b>	Science understanding is evident when a person selects and integrates appropriate science knowledge to explain and predict phenomena, and applies that knowledge to new situations. Science knowledge refers to facts, concepts, principles, laws, theories and models that have been established by scientists over time.
<b>Science as a Human Endeavour</b>	Through science, humans seek to improve their understanding and explanations of the natural world. Science involves the construction of explanations based on evidence and science knowledge can be changed as new evidence becomes available. Science influences society by posing, and responding to, social and ethical questions, and scientific research is itself influenced by the needs and priorities of society. This strand highlights the development of science as a unique way of knowing and doing, and the role of science in contemporary decision making and problem solving. It acknowledges that in making decisions about science practices and applications, ethical and social implications must be taken into account. This strand also recognises that science advances through the contributions of many different people from different cultures and that there are many rewarding science- based career paths.
<b>Science Inquiry Skills</b>	Science inquiry involves identifying and posing questions; planning, conducting and reflecting on investigations; processing, analysing and interpreting evidence; and communicating findings. This strand is concerned with evaluating claims, investigating ideas, solving problems, drawing valid conclusions and developing evidence-based arguments.

The project enabled the PSTs to consider these strands and incorporate aspects of them into learning tasks using an inquiry approach. Students needed to understand the Science behind the activities that they were planning. They needed to understand and embrace the human aspect as they were modeling real scientists and they needed to investigate experimentally the optimum conditions for their activity as well as the safety requirements. The PSTs mapped these out in their planning.

The task of judging of the primary students' posters enabled the PSTs to experience using assessment rubrics and to reflect on how successful these were, as well as ways of improving them. They collaborated to select an overall winner and participated in discussions involving each judge's perspectives.

The PSTs indicated in their reflections that it was hard for the Year 7 students to grasp the investigative method. The PSTs realised that they needed to work on the scaffolding and motivation aspects of the university theory and apply and reapply these strategies. One PST described their amazement at the progress of the Year 7 students over the five week period in terms of engagement, building relationships with their students, how group dynamics impacting on the learning climate in the classroom and their students' understanding of the scientific method.

To be successful, effective communication within and between learning sites is crucial, as is a team of dedicated teachers who are prepared to support learning in innovative ways. A person from the school and one from the university who were committed to and motivated by the positive aspects of the program were instrumental in supporting the program. The PSTs in the forum discussion agreed that it became evident that each person involved needed to focus on

clear communication and working towards the same goal. The expectations were unclear at times throughout the experience and this had a negative effect on their focus and on their smooth progress towards the event. They also identified time and flexibility as clear factors that affected the success of the program. Time for planning, reflecting, organizing and conducting the event needed to be made available. Flexibility of timetables, workloads, organization of spaces and ways of working were also deemed important. These are complex issues for schools and universities to manage however they need to be addressed in clear and coherent ways if a partnership is to be successful.

Another key area of interest in the learning of the PSTs was what they described as the “reality of schools”. The PSTs became aware of the extra activities that happen outside the “normal” classroom that teachers regularly deal with. This highlights the opportunity to bridge the theory practice nexus by developing hybrid spaces such as the one that is examined in this paper. The complexities of teaching go beyond planning and delivering learning experiences for students and cannot be fully appreciated by PSTs from their university classes. Organization of people, reorganization of spaces and classes, legal requirements, logistics of transporting students, health, safety, management and relational aspects of working with primary and secondary students, as well as with potentially dangerous chemicals were challenges that the PSTs were unlikely to have managed within a traditional placement. These “realities of schools” are an important aspect of the learning of PSTs towards becoming quality teachers.

## **Conclusion**

Although this paper has focused more specifically on the PSTs who took part in the project, the project was highly successful in supporting powerful learning within all institutions involved,

including for the students and teachers from each different sector. Throughout the project I experienced an overwhelming sense of the importance of transformational partnerships between schools and universities. Darling-Hammond (2009) describes the ‘clinical side of teacher education’ as having been conducted in a somewhat ‘haphazard’ manner that has depended on the ‘idiosyncracies of loosely selected placements with little guidance about what happens in them and little connection to university work’ (Darling-Hammond, in Zeichner, 2010). This particular project was neither haphazard nor loosely guided, but rather was carefully and deliberately crafted to guide PST learning. The PSTs were able to connect and apply the theory that they were learning at university in an authentic, relevant and meaningful situation. They were able to relate more closely to the ‘reality of schools’ and understood more about their roles as teachers.

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## What do elves wish for? A new look at the role of teacher aides

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### Abstract

This article reports on research investigating the role of teacher aides (TAs) working in an Australian high school that caters for a diverse range of student needs. Using a mixed-methods approach, nine TAs and seven students from the school participated in interviews and a questionnaire, designed to elicit their attitudes and perceptions concerning teacher aide training and professional development needs. Study findings support several important issues identified in the existing literature on utilising TAs in schools, yet the TAs here also identified novel skills and attributes as additional areas of specific developmental need. Both aides and students also expressed clear expectations that the aides were responsible for various pedagogical outcomes. These findings are important because they offer insights into aide deployment from the POV of the TAs themselves. From this perspective, particular recommendations concerning the development of TAs are made, and directions for future research are identified.

**Keywords:** inclusion; teacher aide; additional needs; special education; professional development; pedagogy

### Introduction

Although at times contested as a viable concept, the term *inclusion* is generally accepted as referring to the education of students in general education classrooms (Heflin & Bullock, 1999).

Importantly, in what has been termed the “Inclusion Education Reform” (Bourke & Carrington, 2007), the education of students with disabilities has shifted significantly to mainstream, general education settings. Of interest is that this reform has created a shift in the teaching practices and philosophy relating to the use of *teacher aides* (TAs) in schools, where their role increasingly involves additional responsibilities and duties relating to general learning and non-special-needs students (Rubie-Davies, Blatchford, Webster, et al., 2010). According to Goessling, (1998), such expanded duties require TAs to demonstrate a higher level of content knowledge, as well as manage the social interactions that occur between students, and between students and teachers.

From this perspective Howard and Ford (2007, p. 26) have provided a technical definition for mainstream TAs as “school personnel who provide direct and indirect support to students, under the supervision of teaching and/or administrative staff”. However, Goessling (1998) has given us a more colourful, and perhaps more accurate, description. He portrays aides as “invisible elves” that go about their duties unnoticed. Of course, the thing about elves is that they work tirelessly, never complain, and seem to be able to undertake any type of work required to get the job done. Because of this, a primary goal of the current study has been to investigate the role of TAs within a mainstream setting, in order to determine the sorts of issues, needs, and supportive structures required by the aides to perform their role in a “best practice” manner.

### **Background to the Current Study**

The need for this study stems from Educational Reform principles, which require schools to increasingly accommodate greater numbers of students with special needs within mainstream classrooms. The principle of inclusion, in particular, has led to specific types of aide-related

consequences, involving changes to the role of TAs, adverse effects for students, and increased pressure on the TAs themselves.

In the UK, educational reform has led to the notion of “workforce remodelling”, referring to the restructuring of pedagogical and support duties that has evolved out of the increasingly diverse use of TAs across different contexts and duty descriptions. However, an evaluation of workforce remodelling by the SEN inspectorate (Ofsted, 2010) found that the pedagogical performance of TAs was generally inconsistent and of poor quality. This same report also found that in spite of these pedagogical concerns, schools were increasingly expecting TAs to take on more teaching roles, and even requiring them to “make up” for inadequate teaching in some instances. Importantly, this report calls for the strategic training of all paraprofessionals operating in schools under the remodelling scheme.

Similarly, in a report on the 5-year UK project, *Deployment and Impact of Support Staff* (DISS), Blatchford, Bassett, Brown and Webster (2009) noted that the type of duties performed by TAs had changed significantly during the project period, from the provision of primarily administrative and low-level teacher support duties to the provision of direct pedagogical interactions with students. In turn, Blatchford, Russell and Webster (2012) connect such pedagogical interactions to decreased teacher/student interactions, and claim these changes have led to associated decreases in academic achievement for students.

Rubie-Davies, Blatchford, Webster, et al. (2010) examined the different types of interactions that occurred between students and teachers, and between students and TAs. They found that the nature of discourses occurring between teachers and students, and between TAs and students, displayed major pedagogical differences, with many of the important pedagogical skills involved

in effective teaching (concept teaching, use of prompts and cues, use of questioning, lesson focus, linking the learning to prior knowledge, and motivating engaged cognitive focus) found to be lacking in the TA discourses. A key recommendation from Rubie-Davies et al. was that the existing model of teaching effectiveness required re-examination in light of the preferred pedagogical contributions from TAs. In line with this, Groom (2006) also identified the need to develop the pedagogical skills and attributes of TAs, arguing that *professional development* was necessary for ensuring the sustainability of quality learning for students with special needs.

In terms of learning, the literature has also identified generalised negative effects for students receiving support from TAs within a mainstream context, described as being decreased socialisation, isolation, and the teacher aide as primary educator and friend (Broer, Doyle & Giangreco, 2005; Tews & Lupart, 2008). Numerous detrimental effects for students that are specific to the use of one-on-one aide support have also been identified, including separation from classmates, unnecessary dependence, interference with peer interactions, insular relationships, and feeling stigmatized (Giangreco, Yuan, McKenzie, Cameron & Fialka, 2005).

When we turn to the TAs themselves, a notable detrimental effect is that they experience high levels of burn out, ascribed to increasing responsibilities without concomitant training to develop the required skills (Mueller, 1997). With the increasing numbers of students and TAs involved in *special education* programs, aides have also been found to report higher levels of responsibility with respect to making curriculum modifications, providing behavioural support, and reporting information regarding student progress (Dowing, Ryndak & Clark, 2000). These findings are important to the current study because they underscore the need to better match responsibility and training for TAs, an important consideration within the inclusive reform climate.

The current research took place within an Australian context, and from this perspective Howard and Ford (2007) examined the perceptions of Australian TAs concerning the relationship between responsibility and training in relation to their role in supporting secondary students. They found the aides received little to no formal orientation, training, professional feedback, or supervision, and that this was perceived as having a negative impact on job satisfaction for the aides. In contrast to this, a US study by Giangreco, Edelman and Broer (2003) found that when training and improved supervision did occur, it resulted in improved job satisfaction and retention of TAs.

### **Purpose of the Current Study**

How a school utilizes TAs is based on the goals and needs identified in the Individual Education Program (IEP) developed for students. Thus, the experiences of TAs can vary from school to school, as well as from student to student. For this reason it is considered appropriate to document and evaluate the use of TAs within a single school, in order to provide a case study understanding of the ability of TAs to perform consistently, diversely, and with “invisible” efficacy as they go about delivering the specialist support expected by the school and required by their students. In line with this, the current study sought to establish the perceptions of TAs concerning the changing duties, responsibilities and relationships that affect their sense of professional efficacy. This approach seemed important in light of the relatively large body of existing literature examining the role of TAs from the perspective of schools and educational systems, and is viewed as an important alternative source of insight into the types of professional development that should be considered when designing for the skills and attributes that are preferred for TAs working in a remodelled workforce.

### *Study context*

The current study took place at a Catholic Schools Office co-educational secondary (high) school in New South Wales, Australia, where one of the authors is employed as a Special Education Teacher. The other author was engaged as mentor and co-researcher, as part of a National Partnership Teacher Quality Program involving schools and university-based education departments. The school covers a large geographical area and intakes students across a range of SES and cultural backgrounds. It has an enrolment of approximately 750 students, and employs 61 teachers, 5 administration staff, 2 grounds staff, 2 general TAs (general classroom support) and 9 *additional needs* TAs (one-on-one support). The school currently has 30 students with a verified disability. The highest represented categories of need currently in the school are Autistic Spectrum Disorder and Cognitive Impairment. Of relevance is that in 1989 the school district to which this school belongs employed just two teacher aides, whereas currently 204 aides are employed. Thus, in line with the existing literature, the need for paraprofessional support at the particular school of interest has broadened and increased significantly over the recent past.

### **Methods**

Once appropriate ethics approval had been received from the relevant educational and university bodies, the research was undertaken using a mixed-methods design. Mixed-methods were used because this approach is able to describe a situation as it appears in context and because it documents responses and information in accordance with the actual beliefs and perceptions of individual participants. Both aspects of the situation were considered important in light of the aim to determine the perceptions of TAs concerning professional development within a case study context.

Data collection included a questionnaire and interviews to collect information from each of the participating TAs, and interviews with follow-on focus group discussions to collect information from the participating students. All interviews were administered individually, with student interviews ranging from 25 to 35 minutes, and interviews with the teacher aides ranging from 40 to 55 minutes. The questionnaire was developed around the issues identified in the literature, and an overview of questionnaire results is presented in Table 3. The interview questions were designed in light of the questionnaire outcomes, and are presented in the section following Table 3. Focus group discussions were used to seek additional ideas and insights from the participants, to check for conceptual understanding, and to ensure that the participants were in agreement with the information that was to be reported as part of the research.

### *Participants*

There were nine participating TAs in the study. An overview of their relevant characteristics is presented in Table 1. Note that the age range varied quite widely (23 – 63 yrs), as did the experience levels for TAs, with years working as an aide ranging from 2 – 17 years. All of the aides reported they worked mainly with students requiring support for Learning Difficulties (LD), Autistic Spectrum Disorder (ASD), and Cognitive Impairment (CI). Three of the teacher aides were employed full time and one was studying to be a teacher.



Table1. Overview of participant characteristics: TAs

	Sex	Age	Education	Employment Status	Disability Categories	Years as TA
1	Fe	49	*TAFE	Part Time	ASD/CI/LD	6
2	Fe	50	*TAFE	Full Time	ASD/LD	2
3	M	23	University	Part-time	ASD/CI/LD	5
4	Fe	40	University	Part-time	ASD/CI/LD	7
5	Fe	35	*TAFE	Full Time	ASD/CI/LD	5
6	Fe	47	*TAFE	Part Time	ASD/CI/LD	8
7	Fe	63	*TAFE	Full Time	ASD/CI/LD	17
8	Fe	58	*TAFE	Part Time	ASD/CI/LD	14
9	Fe	50	*TAFE	Part Time	CI/LD	6

\*TAFE = *Technical and Further Education*. TAFE education includes diploma and associate degree forms of certification, generally relating to vocational studies.

Seven students who were receiving support from the aides also participated in the study. These included one student each from grades 8, 9, 10 and 12, and three students from grade 11. The ages for these students ranged from 14 to 18 years, with an average age of 16.4 years. In terms of support needs, two of the students had Autistic Spectrum Disorder (ASD), one had Cognitive Impairment, three had generalised Learning Difficulties, and one had a combined diagnosis of ASD and Cognitive Impairment. All of these students are undertaking either a mainstream program (high school completion), life skills program (social skills only), or a combination of

both as their pattern of study. An overview of the relevant characteristics for these students is presented in Table 2.

Table 2. Overview of participant characteristics: Students

	<b>Sex</b>	<b>Age</b>	<b>Grade</b>	<b>Disability Categories</b>	<b>Years at current school</b>	<b>Pattern of Study</b>
1	M	14	9	ASD	3	Mainstream
2	M	18	11	LD	5	Life skills / Mainstream
3	Fe	18	12	ASD	6	Mainstream
4	Fe	17	11	Cognition	4	Life Skills
5	M	16	10	ASD / Cognition	4	Life Skills
6	M	18	11	LD	5	Life skills / Mainstream
7	Fe	14	8	LD	2	Mainstream

## Study Findings

Questionnaire findings obtained for the participating TAs included the areas of support they preferred to work in, job aspects they found most rewarding, areas of challenge, the emergence of reflective support “themes”, self-identification of necessary skills, feeling valued, inappropriate responsibilities, sense of community, feeling respected, receiving constructive

feedback, professional development (PD), content knowledge, and personal challenges. Table 3 offers an overview of the TAs responses to each of these questionnaire areas, with a summary and relevant comment provided concerning how each area relates to or clarifies the study interests. Note that in some areas the aides were able to make more than a single response to the item. Thus, the percentages in some areas add up to more than 100%.

Table 3. Overview of questionnaire findings for teacher aides (TAs)

Questionnaire Area	Aide Responses	Summary	Relevance
<i>Preferred area of support to work in</i>	<ul style="list-style-type: none"> <li>• Work with same student over time</li> <li>• Prefer “life skills” student</li> <li>• Prefer senior students</li> </ul>	Main concern seems to be to develop close relationships, avoid academic tutoring, and work with more mature students.	Focus for aides is on relationships. These responses may also represent a sense of inadequate content knowledge on the part of the aides.
<i>Most rewarding aspects of providing special needs support</i>	<p>“Very Rewarding” selected for all aspects, except:</p> <ul style="list-style-type: none"> <li>• “assisting students”</li> <li>• “gaining new knowledge or skills”, and</li> <li>• “working with challenging students”</li> </ul>	<p>These aides find their work highly rewarding in general.</p> <p>“Other areas” of reported reward included working with teachers, getting to know a student well, and seeing a student excited about learning - all involving personal learning</p>	The 3 aspects not given the highest rating all involve having to be responsible for managing academic or behavioural learning.

		(from working with teachers) or aspects of relationship building.	
<i>Challenging aspects of providing support</i>	<p>2 aspects unanimously rated as “<i>Not Challenging</i>”:</p> <ul style="list-style-type: none"> <li>• “<i>working with supervisor</i>”</li> <li>• “<i>given award conditions</i>”</li> </ul> <p>3 aspects received one response each for “<i>Challenging</i>”:</p> <ul style="list-style-type: none"> <li>• “<i>personal care</i>”</li> <li>• “<i>inappropriate behaviour</i>”</li> <li>• “<i>student motivation</i>”</li> </ul>	The most challenging aspects for these aides were having to work with inappropriate behaviours, working with students who lack motivation, and having to look after the personal care of students.	The common theme for these challenging aspects seems to be that they all involve working in a situation where the aide feels little control over the outcome.
<i>Self-reflective “themes”, identified by the aides as helping them to provide</i>	<p>Emergent themes included:</p> <ul style="list-style-type: none"> <li>• Being calm</li> <li>• Being organised</li> <li>• Being patient</li> </ul>	Most common themes to emerge were being a “ <i>good listener</i> ” and having a “ <i>friendly /positive</i> ” attitude.	Overall, this part of the teacher aide findings suggests that the aides tend to understand their support role

<i>effective support</i>	<ul style="list-style-type: none"> <li>• Having academic knowledge</li> <li>• Relating to students</li> <li>• Being friendly/positive</li> <li>• Being a good listener</li> <li>• Being compassionate</li> <li>• Having disability knowledge</li> </ul>		mainly in terms of providing social support and developing relationships with students. Again, there seems to be some anxiety about having adequate academic knowledge.
<i>Necessary skills for being an effective teacher aide</i>	<p>Skills identified included:</p> <ul style="list-style-type: none"> <li>• Knowledge about disabilities</li> <li>• Being organised</li> <li>• Multitasking</li> <li>• Being flexible</li> <li>• Having good subject content</li> <li>• Being patient/calm</li> <li>• Behaviour management</li> <li>• Ability to work as a team</li> </ul>	Most common skills were being organised, being flexible, and being patient/calm.	The most common skills here suggest a focus on the development of a supportive relationship. Of interest is that technology skills were not identified as necessary to being effective. This is interesting in that the use of technology is a theme that appears quite clearly in other

			parts of the study.
<i>Feeling welcomed in classrooms</i>	<ul style="list-style-type: none"> <li>• Two-thirds of the aides stated they felt “<i>Highly Valued</i>” by both teachers &amp; students</li> <li>• Two aides reported feeling “<i>Very Welcomed</i>” by teachers</li> <li>• One third of the aides said they felt “<i>Welcomed</i>” by students</li> </ul>	Overall, a fairly clear sense of feeling welcome in classrooms was reported by the aides, although this perception came primarily from the teachers.	Specific examples of feeling welcomed included, “ <i>the teacher asking your opinion</i> ”, “ <i>including you in discussions</i> ”, and “ <i>students asking you questions</i> ”. These are all aspects of reciprocal & interactive mentoring.
<i>Being given inappropriate responsibility by the teacher</i>	<p>2 aides responded to this item with “<i>Yes</i>”.</p> <p>The other 7 aides responded with “<i>No</i>”.</p>	The 2 affirmative responses involved being asked to do inappropriate paperwork by an Additional Needs Teacher, and having to do too much work preparation for life skills students.	Overall, these responses suggest that the TAs do not feel they are being asked to make decisions or perform inappropriate tasks to a significant degree.
<i>Feel like part of the school</i>	Unanimous response of	Activities nominated as examples of this	Overall, there is a positive feeling

<i>community</i>	“Yes” to this item.	included being involved in special activities (musicals, expo, carnivals), teachers greeting them & asking for their opinion, students asking for help & saying “ <i>thank you</i> ”, and being involved in staff social activities.	amongst the aides that they belong to a school community. The authors note an overlap between these activities and the sense of feeling welcomed.
<i>Feeling respected &amp; appreciated in role as teacher aide</i>	There were 5 response categories for this item (Not at All / A Bit / Generally / Very / Highly):  <ul style="list-style-type: none"> <li>• 5 aides reported feeling “<i>Highly</i>” respected &amp;</li> <li>• 4 aides reported feeling “<i>Very</i>” respected</li> </ul>	Similar to feeling welcomed, these responses were again highly positive.	Note that the strong positive nature of these responses is in contrast to responses for this aspect of aide work from earlier studies (cf. Downing et al., 2000).
<i>Receiving</i>	This was a “Yes/No”	High positive	The area of formalised



<i>constructive feedback</i>	<p>item:</p> <p>8 responded with “Yes”</p> <p>1 responded with a handwritten “Sometimes”</p>	<p>agreement, with the single “Sometimes” response identifying the lack of a formalised evaluation process as the basis for her or his response.</p>	<p>evaluation of TAs, involving constructive feedback, has also been identified as an issue in the literature.</p>
<i>Current Professional Development (PD)</i>	<p>All 9 aides indicated they have received some PD, that they are often involved in staff development days, and that this is much appreciated.</p> <p>However, 4 of the aides also indicated they preferred PD activities that are more relevant to the students they are working with.</p>	<p>The aides seem to receive &amp; appreciate PD, yet they feel this may not always be as relevant or practical as they would prefer.</p>	<p>These responses appear to indicate a preference by the aides toward more skill-based PD activities, rather than course or knowledge-based activities only.</p>
<i>Type of preferred skill development</i>	<p>Aides rank ordered a number of skill</p>	<p>In-service &amp; on the job skill development</p>	<p>The responses for this item may suggest the</p>

<i>activities</i>	<p>development activities:</p> <p>1 = In-service training on specific topics relating to the impairments they were working to support (i.e., specific content knowledge)</p> <p>2 = On the job training for individual student needs (similar to #1, but more practical)</p> <p>3 = On-line training</p> <p>4 = Peer support</p>	<p>activities are the preferred methods of training. Both involve face-to-face learning and together account for more than three quarters of the responses to this item.</p> <p>Focus for preferred development is mainly concerned with specific content knowledge &amp; practical strategies.</p>	<p>aides feel there is not enough relevant detail, or perhaps not specific enough strategies, in much of the online training and peer support approaches to skill development they are exposed to.</p> <p>Overall, it seems the teacher aides view having information specific to the students they are currently working with as highly valuable to their own PD.</p>
<i>Need for further content knowledge in relation to school subjects</i>	<p>In terms of the high school subjects they found the most need to develop knowledge for, the aides identified the following:</p> <ul style="list-style-type: none"> <li>• Technology and</li> </ul>	<p>In terms of “elf” work, the aides seem to desire to be better enabled to assist with the content side of student learning.</p>	<p>These findings are important from both a timetabling and a PD perspective. How TAs can be trained to best support a student - particularly in upper high school – clearly</p>

	<p>Applied Studies</p> <ul style="list-style-type: none"> <li>• Mathematics</li> <li>• Science</li> <li>• French</li> </ul>		needs to be more formalised.
<i>Personal Challenges</i>	<p>The final 2 questionnaire items targeted any particular disability or group of students that the aides found it difficult to work with:</p> <ul style="list-style-type: none"> <li>• 6 responded with “<i>Behavioural Difficulties</i>”</li> <li>• 2 with “<i>ADHD students</i>”</li> <li>• 1 with Oppositional Defiant Disorder (ODD)</li> </ul>	Note that the common denominator between all these groups is that they tend to exhibit difficult behaviours.	These findings overlap substantially with the aide’s responses to the PD items, and seem to indicate that the school should provide it’s aides with more training on specific disabilities, and how to manage students with challenging or difficult behaviour.

### **Aide-identified Need for Additional Training**

In their interviews, the TAs were asked to identify any area they felt relevant and important in relation to their need for additional training or professional development. Once identified, they were then asked to rate each area in terms of the required training being “*essential*” (base-level training only) or “*moderate*” (more intense level of training).

Figure 1 shows the identified areas and their ratings. These findings overlap considerably with those of the questionnaire item concerning professional development (PD), and taken together these two sources of information provide a good basis for planning professional development activities for these particular TAs. Note that several of the individual areas identified refer collectively to classroom and behaviour management (Behaviour, Non-Responsive, Conflict Resolution, Stress Management, Aggressive Students, Social Skills). It therefore seems that a major emphasis for these TAs is on the need for PD in this area. It is also of interest that, contrary to the aides' responses concerning professional development from the questionnaire, technology is rated here as the area in most need of additional training, followed closely specific disability information and knowledge of government policies.

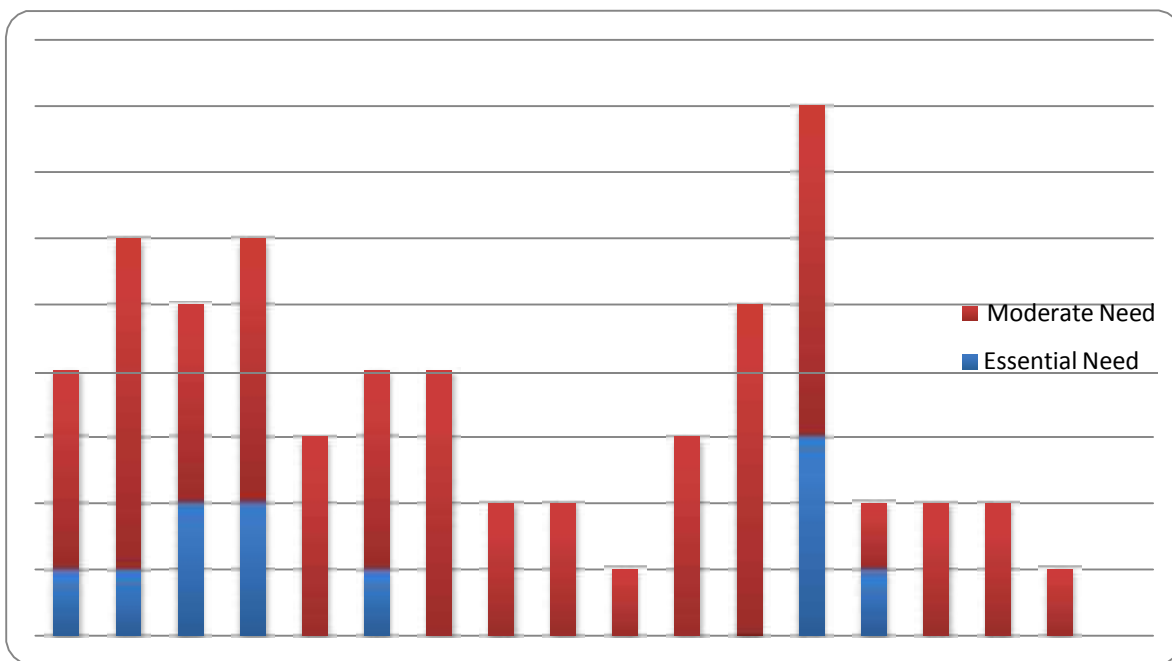


Figure 1. Areas identified by TAs as requiring essential or moderate additional training

Overall, the interview outcomes support the questionnaire findings, yet they also elaborate and clarify them. We can see that these TAs generally reported that they found their job rewarding,

and that they felt welcomed, respected, appreciated and valued within the school community. Also, they were not ordinarily being asked to complete tasks that were not their responsibility. Skills and personal qualities identified by the aides as being a requirement to be effective in the role included patience, ability to relate to students, being positive, a good listener, flexible, gaining knowledge about disabilities, and having organizational skills. Thus, this part of the study findings is contrary to those of Goessling (1998) concerning invisibility and marginalization.

## **Student Findings**

Giangreco and Doyle (2004) stated that one way for teachers to know if they have been successful in supervising a teacher's aide is to ask the student being supported how she or he feels about the support. This section summarises the findings obtained by interviewing students who were supported by the TAs in this study. These interviews used open-ended questions, aimed at inviting the students to identify and comment on the support they received from the TAs. In their responses, the students talked mainly about the types of assistance they received; what they liked most and least about their support, how they felt their peers perceived the support, and how the support affected their personal independence. Some students also offered a reflective evaluation of the TAs' role. The following section provides an overview of these responses, categorised by the areas identified by students.

### *1) Types of assistance received from TAs*

The most common types of assistance identified by the students were helping to clarify learning tasks, explaining topics, providing emotional support and providing behavioural support. The main emphasis for types of assistance therefore had to do with providing conceptual

understanding and supporting feelings and behaviours. These responses seem to correspond to the assertion of the aides themselves, that much of what they do involves building relationships with students, and that they are expected to understand student learning content.

## 2) *Most-liked aspects of support*

Student “likes” concerning their support from the TAs seemed to focus on aspects that helped them achieve academically. One student said, “*My aide helps me to get my work in on time*”, while a couple of students said, “*It makes school easier for me*”. A similar comment from yet another student was, “*I do much better at school with their support*”. This is similar to the TAs’ perceptions that they are expected to understand the academic content being learned by students. It also corresponds to the literature claiming an increase in pedagogical expectations for TAs is taking place.

## 3) *Least-liked aspects of support*

Four “least-like” themes were apparent in the way students identified and commented on this area of support:

- *behaviour intervention* (where aides intervened to change avoidance behaviours by the student)
- *negative verbal comment* (where the student had been “*bagged*” by peers simply because they had an aide)
- *over-reliance* (where students became too dependent on help from the aide)
- *independence* (where they felt having an aide did not allow them to pursue independent learning sufficiently)

These themes indicate that although students are aware of the need for aide support, they are also aware of the need to self-regulate, and perhaps a bit concerned with the relationship between support and autonomy. The themes also provide possible direction for ongoing aide training however, suggesting as they do areas of concern for ongoing monitoring and adjustment.

#### *4) Peer perceptions of the support*

Although there were numerous identifications of prior bullying as a “*Sped*” (Special-Education student) in primary school, there were no identifications of negative peer perception in relation to the students’ secondary (high) school situation. The students unanimously identified positive peer acceptance of the support at this school. This suggests broad social acceptance of aide support by students in general, similar to the findings of Tews and Lupart (2008).

#### *5) Personal independence*

One student said that his aide sometimes offered to help when it was not necessary, but the other six said that they had not received any unnecessary support from the TAs. The over-riding consensus for this part of the interview was that support from the TAs did not interfere with personal independence.

#### *6) Socialisation*

Peer socialisation is an extremely important aspect of adolescent wellbeing, and in this respect five students commented that they had not encountered any problems or issues that impacted on their ability to interact with peers. As one student put it, “*My friends get help from my aide too, so they don’t mind her being there*”. Two students reported that they had been separated from peers on occasion due to their particular needs, and that this caused them to feel somewhat

isolated. However, both also added that this was not due to the presence or support of TAs. Rather, it occurred because of some other aspect of the situation. Overall, these discussions suggest that the TAs do not offer an impediment to socialisation. Again, this is counter to the literature, which suggests that aide support tends to impact negatively on students' ability to interact with their peers (cf. Broer, Doyle, & Giangreco, 2005).

### *7) Reflective Evaluations*

Several students offered an evaluation of their experiences relating to support at the school. Reflecting on their *"overall feelings"* about the support, students made comments such as, *"The best thing I have ever had at school!"*; *"Without the help school would be harder"*; and *"I like the support and I know that I need it"*. One student was even more emphatic, saying *"I now believe that I can achieve and teacher aides should never give up on students – they will thank you in the end!"* Overall, the students gave positive reflective insights into their experiences with TAs at the school.

## **Discussion**

This study aimed to investigate the perceptions of TAs and the students they support concerning the role, responsibilities and perceived training needs of TAs at a case study level. A primary goal of the research has been to contribute knowledge concerning how best to deploy TAs in light of the increasing need to accommodate students with special or additional learning needs in mainstream classrooms, and from the perspective of the TAs themselves. In this respect several models for deploying TAs have been identified (Cremin, Thomas & Vincett, 2005), including "room management" (dividing support according to specific roles within a classroom), "zoning" (dividing the support according to the geographic layout of support needs within a classroom),



and “reflective teamwork” (a systematic team-teaching approach, wherein TAs and teachers actively listen and respond empathically to support needs within a classroom). Each of these models has been developed to utilise TAs from the perspective of system-wide or institutional needs, and therefore no single model is entirely applicable to the current situation. However, it is noted that the use of TAs in this study conforms most closely to the “zoning” model, in that the TAs here supported students primarily from a needs-based approach.

An important finding to come out of this study is that supporting students with additional needs is a balancing act. This involves providing sufficient yet not too much support, so that students experience success while also not becoming dependent. It seems clear that the students in this study had a good understanding of what they liked and disliked about the support, and that, overall, they found the support they received to be quite positive.

Another finding involves the need to plan specific time for relationship-building into support programs. What the current study suggests is that the feelings students have about their relationship with TAs needs to be discussed in the first instance, and a plan for support that nurtures academic needs - as well as social and emotional needs - developed within that consultation framework. The students in this study appear to have developed a good understanding of their needs. Yet this will not necessarily be the case for all students, and from the findings here it is felt that failing to work with students on their feelings about receiving support could lead to disengagement from support services, an outcome that seemingly can, and certainly should, be avoided.

A similar aspect of providing support that has been highlighted in the literature is peer acceptance. The importance of peer acceptance was reaffirmed here, with the students indicating that their support by TAs had been positively accepted by their peers. The reasons given for this

suggested that it was because their classmates were familiar with the TAs, and felt that the aides were also there to assist them if required. It is accepted practice in many Australian schools that teacher aides should not oversee a student for more than one year, due to concerns about dependence. Findings from this study challenge this perception however, and warrant further investigation into the positive peer acceptance effects that TAs might provide by following a year group.

These findings also suggest that while independence is not a concern, it is an area that needs to be reflected upon within school practices. In particular, that involving the student in discussions about when they should receive support, and reminding TAs about the importance of not providing unnecessary support, are both crucial to the development of an overall positive support system for the school.

### **Study Limitations and Future Research**

While this study is limited to the school setting in which it occurred, it is nonetheless felt that the study findings represent authentic outcomes, and are suitable for guiding practical changes relating to these particular aides. In addition, because this study focused on the TAs' perspectives concerning professional development (PD), in contrast to the existing research, which has examined PD primarily from the perspective of institutional and systems-level needs, it is felt that the current study contributes information about the development of TAs that is worthwhile and valuable.

A distinct finding for the study, and unlike previous studies in the area (cf. Giangreco, Edelman & Broer, 2001; Goessling, 1998), was that the teacher aides at this school felt valued and respected as members of the school community. Involvement in activities, having a place in the staff room, and being thanked by staff and students had increased the teacher aide's feeling of

belonging. This finding cannot be ignored, and future research should therefore seek to implement similar activities and actions at other schools.

## **Conclusion**

In effect, this study represents the first few phases of an action research approach, in which we have considered a school-based issue relating to the provision of support services to students with special needs, and then collected information about this provision from the primary stakeholders themselves. Analysing the information has answered some of our initial questions concerning professional development for teacher aides. Yet reflection on the outcomes achieved here has also opened the way for further developments in the way ongoing improvements are to be sought and understood.

As noted from the literature, one of the most critical issues with respect to aide deployment concerns qualitative differences between teachers and TAs in terms of pedagogical knowledge and skills. In this respect overall findings from the current study have highlighted the expectation of both students and TAs that a crucial role of the aides is to assist students with academic, social and behavioural learning. The importance of these findings are that they underscore from the POV of both students and TAs what other, institutionally-oriented studies have also found, namely that TAs require increased pedagogical skills in order to support the teaching/learning process at the level of expected performance. Thus, whether we contest the notion of inclusion or not, if TAs are to be operationally organised around the expectation that they will perform teaching roles, then we must accept that professional development in the areas of pedagogy and increased content knowledge is necessary. In the case of this particular school, such development would need to include managing student behaviour, particular instructional strategies, and the use of technology in the classroom. In more general terms it would help if schools and education

systems were to develop clear job descriptions that match the expected role and responsibilities of TAs.

The ultimate focus for this research has been how best to support the principle of inclusion, and it is hoped that these results will encourage schools and teachers, as well as teacher aides, to explore ways in which the professionalism of educational support can be improved at every level of students' experience.

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