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Abstract

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Keywords

qualities; changes, teacher, perceptions, teachers, centric, student, egocentric, development, pre-service

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Abstract: This study looks at pre-service teachers' developing perceptions with a view to supporting teacher education practices. In determining and guiding program structures it is the opinions of the experts that are most often heard. Absent from this debate is an understanding of the changing perceptions of the pre-service teacher as they progress through their program. The purpose of this paper is to extend our understanding of pre-service teacher belief systems' highlighting, the relevance this has for understanding and supporting pre-service teacher development. The perceptions of valued teacher qualities changed from ego-centric beliefs to student centric practices for the participants in this study. Effective teacher education makes connections between perceptions and new ideas, building on existing conceptual frameworks. Findings from this study contribute to the discourse on how pre-service teachers construct and reframe their beliefs about 'good' teachers as they progress from pre-service teacher to graduate teacher.

Introduction

Pre-service teachers enter teacher education with strongly held beliefs and attitudes on the qualities they believe are most important to have or develop, having 'closely observed and scrutinized teachers and their behaviour' over the course of their own schooling (Fajet, Bello, Leftwich, Mesler, & Shaver, 2005, p. 717). Teaching is one of the few professions where everyone has a history and an opinion on what matters most. It is the opinions of the experts that is most often heard in the discourse; guiding and determining program structures, graduate accreditation and the scaffolding and timing of learning for pre-service teachers' (Reynolds, 1992; Shulman & Shulman, 2004). What is often absent from this story is what the pre-service teacher themselves believe. Consequently, examining pre-service teachers' perceptions provides the opportunity for teacher educators to see more clearly and to create different vantage points to support learning, which is crucial to 'knowing and doing being more tightly aligned in practice' (Loughran, 2010, p. 6). To facilitate this process there is a need to gauge the conceptual frameworks of the pre-service teachers; to understand their developing perceptions of teaching.

The findings for this enquiry have been taken from a larger study on pre-service teachers. This paper reports on an investigation of a 167 undergraduate Personal Development Health and Physical Education (PDHPE) secondary pre-service teachers, a snap-shot enquiry gathering data from each cohort in a four year degree– pre and post over a one year period. The research question looks at the pre-service teachers' perceptions of valued teacher qualities and how beliefs and ideas changed. For the purpose of this study 'teacher quality' is defined as those characteristics – skills, knowledge and attitudes needed to be an effective secondary teacher. Deeper understandings of pre-service teachers' changing perceptions provides the opportunity for teacher education to expand and strengthen links between theory and practice, to identify consistent opportunity to scaffold and reinforce reflective practices thus, influencing perceptions and developing teacher identity.

Data analyses highlight the evolving nature of these perceptions, progressing from an ego-centric stage at the beginning of the degree to a more student-centric stage in the later years of the course. This paper seeks to examine the pre-service teacher perceptions on those characteristics and qualities they viewed as most important, as they reflected and re-evaluated their ideas during the course of their study.

Literature

The purpose of this paper is to tell the story of how a group of pre-service teachers' perceptions developed from ego-centric to student-centric as they progressed through their teacher education course and to suggest reasons for why changes occurred and what implications this has for teacher education practices. Within the scope of such a paper, I have elected to present the literature under three key areas relevant to the study: perceptions of the 'good' teacher; constructing links between theory and practice; and constructing teacher identity. This will necessitate the need to present a breadth of relevant ideas and issues under these core areas of study rather than an in-depth exploration in each.

Constructed perceptions of 'good' teaching

Teacher education programs rarely take into consideration the pre-service teachers' preconceived ideals of 'good' teaching and their socio-cultural histories that they bring with them. These experiences and stories are an important aspect of their lived perceptions and shape their beliefs as teachers (Ayers, 2001; Cochran-Smith, 2004; Duffy & Jonassen, 1992; Olson, 2008). These perceptions are often viewed as being resistant to attempts to change them (Fajet et al., 2005). Consequently, there is limited understanding on how the pre-service teacher's perceptions are constructed, what influences or changes occur during education coursework and how teacher education can influence beliefs. As such, pre-service developing beliefs are unlikely to be used to shape subsequent pre-service education in deliberate ways (Holt-Reynolds, 1992; Jegede & Taplin, 2000).

Recent studies however, have attempted to address this by focusing research on how teacher education aligns with prospective teachers' beliefs to better support the novice teacher to develop (Hammerness, 2005; Darling-Hammond, 2000a; Darling-Hammond, 2000b; Fajet et al., 2005; Koppich, 2000; Merseth & Koppich, 2000; Miller & Silvernail, 2000; Ruscoe, & Fickel, 2000; Snyder, 2000; Whitford). What is known, is that good quality teachers are those with strong personal philosophies, and decision-making skills requiring 'thoughtful adaptation rather than technical compliance' (Duffy, 2009, p. 1).

There are a range of views on how pre-service teachers construct their beliefs about teaching based upon how the pre-service teacher learns (Kagan, 1992; Lieberman, 1995; Pajares, 1992). Viewed from the constructivist paradigm the teacher learns to construct meaning about teaching from views and attitudes that they bring into teaching in a conscious and systematic way (Loughran, 2006; Schommer, 1990). Constructed perceptions are then reframed as the pre-service teacher is exposed to new experiences (Korthagen, Kessels, Koster, Lagerwerf, & Wubbles, 2008). Stage theories are useful in describing this trajectory and the nature of teaching expertise. They do not however, tell us much about the characteristics of this learning, and the progression from concerns to expert skills (Berliner, 2001). As such the process of teacher development is often viewed as learning in a linear fashion, fairly fixed, 'invariant, sequential and hierarchical' (Richardson & Placier, 2001, p.910).

Research suggests that teacher development occurs in distinct phases, stages or as a zigzagging action for the pre-service teachers (Berliner, 2004; Feiman-Nemser, 2001; Fuller,

1969). Current research has the pre-service teachers constructing their knowledge of teaching through a process of reflecting on practical situations, through problem solving, from which new learning develops (Berliner, 2004; Korthagen et al., 2008; Wubbles, 1992). Development occurs, with the pre-service teachers focusing firstly on themselves and their teaching and then eventually to concerns that relate to students' learning (Burn, Hagger & Mutton, 2003; Fuller, 1969; Furlong et al., 2000). Pre-service teachers' views on teaching and what qualities they believe are most important, change as perceptions are reconstructed and reframed, as new experiences challenge or reinforce original held beliefs (Burn et al., 2003). This conscious decision making is based on what is working, by reflecting on their experiences (Joyce & Showers, 2002). Teaching is thus viewed as a problematic process, a journey of development and growth, governed and directed by what they see as important to their practice through their experiences (Loughran, 2010; Mason, 2002; Myers & Simpson, 1998).

Investigating pre-service teacher's perceptions is crucial to understanding how teacher education programs can support teacher development. It is viewed as 'hugely complex and skilled activity.....both a science and an art –requiring scholarship, rigorous critical enquiry, a collective creation of education knowledge according to collegial and communal norms' (Saunders, 2002, p.6). Teacher preparation as a developmental process requires intuition, imagination and improvisation (Darling-Hammond & Brandford, 2005). The challenge to this is that prospective teachers often enter teaching with firm views that often focus more on the teachers personality, less on the subject matter and pedagogical knowledge needed to teach. Teaching becomes merely about transmitting information and enthusiastically encouraging students rather than, assessing student learning to guide purposefully organized learning experiences with scaffolded staged support (Committee for the Review on Teacher Education, 2005, p.33).

Constructing links between theory and practice

The development of 'good' teaching for pre-service teachers involves linking new theories of learning with existing preconceptions in order to have immediate personal relevance and the motivation needed to change preconceptions (Briscoe, 1996; Wubbels, 1992). The process of linking theory to practice is a perennial issue for teacher education programs in which there is often a failure of these programs to influence pre-service teachers' world images and preconceptions (Swennen, Lunenberg, & Korthagen, 2008). There has been extensive research on the problems related to the 'translation to practice of theory on good teaching' and with it the conception of teacher education (Korthagen et al., 2008, p.2). The pre-service teacher conception of teaching and depth of reflectivity is thought to be directly influence by professional experiences, the teaching context and the cooperative teachers' characteristics (Lee, 2005).

As a reflective practitioner the pre-service teacher is expected to construct their own knowledge of teaching. It is the application of this knowledge that is most problematic (Zwozdiak-Myers, 2012; Moon 1999). The pre-service teacher engages in reflective conversations: descriptive, comparative and critical reflection. The type of reflective conversation is indicative of the form of development undertaken by the pre-service teacher viewed as 'surface to deep' and 'transformational learning' (Zwozdiak-Myers, p.27, 2012).

Pre-service teacher development requires coursework that provides opportunities for good connections, providing an adequate time for learning that allows for reasoning, integration and reflection on theory and practice (Darling-Hammond & Brandsford, 2005; Korthagen et al., 2008; Zwozdiak-Myers, 2012). The role of professional experiences in developing reflective thinking is viewed as essential providing the pre-service teacher with the opportunity for self-awareness, an understanding of the role of the teacher and the context

in which reflections on perceptions can take place (Jay & Johnson, 2006, p. 16). Reflection-in-action practice can lead to better understanding for pre-service teachers but not necessarily better practice. According to Atkinson and Claxon (2004) improved practice comes with reflection that is consciously and functionally intuitive, making assumptions conscious and providing an interconnection to the thinking processes (Atkinson & Claxon, 2004, p. 6).

Learning for the pre-service teacher is viewed as a cyclical process of reflection, consisting of: action; looking back on the action; awareness of essential aspects; creating alternative methods of action; and trial (Korthagen et al., 2008). An ongoing problem with this process is the 'washing out' of theory during practice (Korthagen, 2008, p. 48). Adding to this is the reliance on teaching standards to measure development – viewed as a reductionist style of measurement lacking understanding of prior beliefs and limiting in determining qualities that bolster pre-service teachers' (Moore, 2004; Woolfolk, 2000).

The pre-service teachers themselves are capable of contributing to their own practices in a valid way, based on their own perceptions and experiences both within and outside the classroom (Dass, 1998; Ridgeway and Bowyer, 1998). In practice teachers' knowledge constructions are both practical and context-bound, tested against the perceived reality of school experiences. These constructions are likely to be changed only in cases where new experiences create perturbations, leading the teacher to believe that what is known about teaching and learning no longer works (Shaw, Davis, & McCarty, 1990, p.317). The development from novice to expert is the process of 'thinking about teaching' being able to deal with more complex classroom issues and attending to the intellectual/emotional work of teaching. This involves, being able to analyse complex situations, knowing how to respond to them and acquiring a broader, flexible repertoire of teaching skills (Korthagen & Wubbles, 2008).

Constructing teacher identity

For many pre-service teachers their constructed identity initially focuses on themselves, what others think about them as teachers and then eventually move on to students' learning and their own learning with a focus on 'self to a focus on students,' for some teachers the stage of attending students needs will never be reached (Committee on Teacher Education, 2005, p.31). This process is viewed in the literature as the development of teacher dispositions, whereby the pre-service teacher continues to seek answers to strategies for reaching all students. This requires having the necessary skills and disposition to evaluate one's own practice and aptitude to search for answers both at a classroom level and school level (Diez, M, 2007; Committee on Teacher Education, 2005).

Another relevant aspect of teacher identity is the concept of the moral purpose of teaching closely connected to human relationships, suggesting a connection between the caring compassionate teacher and motivation for learning (Byrne, 2005; Day, 2005). Good teachers invest large amounts of their substantive emotional selves in pursuing their work, are accountable to parents, are deeply responsible to their students, and not only express enthusiasm but enact it in principled, values-led, intelligent way (Day, 2005, p. 12).

It can be argued that the pre-service teachers' identity presupposes reflective or critical practices that occur in teacher education and that their perceptions are not necessarily rational or easily measured (Atkinson, 2010). Hence, the pre-service teacher's identity exists within current discourse and practices which are continually changing according to how they are shaped by ideological frameworks and structures. Identity, continually shifts overtime, influenced by internal, external and surrounded contexts and formed within the sense that is made of experiences (Atkinson, 2010; Beauchamp & Thomas, 2009; Sachs, 2005; Walkington, 2010)

Identity development of pre-service teachers involves the understanding of the self and its operation within the context of the classroom or school (Beauchamp & Thomas, 2009). This involves looking at oneself in relation to others. In turn, this influences the development of the pre-service teachers' image of teacher qualities (Hamachek, 1999). The development of 'self' occurs through interactions with others, the connecting of prior and new experiences and is unpredictable and unavoidable, particularly when pre-conceived ideas about teaching fail to work in classroom situations (Conle, 1996, p.299).

Developing an identity as a teacher is an important aspect of securing teachers' commitment to their work and adoption to professional norms of practice (Darling-Hammond & Bransford, 2005). As pre-service teachers develop they form a vision for what teachers do, what is good teaching and identify features that will guide their own teaching practice (Hammerness, 2006). Teachers develop their identity as a member of a racial/cultural group often from a socio-cultural perspective (Olsen, 2008; Sfard & Prusak, 2005) and view themselves as members of a specific group (Carter & Goodwin, 1994).

The Present Study

For the purpose of this study a mixed-method approach was adopted, using a constructivists' theoretical perspective. Previous studies on pre-service perceptions have used a combination of methodologies (e.g. Fajet et al., 2005; Weinstein, 1990). For this study, survey questionnaire and focus groups were employed. The choice of the study group—undergraduate (PDHPE) teachers—is significant in terms of the context and the images that this group have of a good teacher. This was a restricted entry course attracting students who achieved high academic results and represented excellence in sports. The majority of the study group were from a similar background with a balance of genders in the program. This group's particular cultural and belief systems, although viewed as typical to this subject area, represented success in the school systems, presenting a unique vantage point that is rarely considered yet, offers the potential of insights into pre-service teacher's beliefs. The findings within this study have implications and applications for the development of evidence-based University policies, teacher education design, teacher education strategies and the accreditation of teachers.

Method

This investigation involved surveying a group of Australian undergraduate (PHDPE) pre-service teachers. Ethics application was submitted and approved. Prior to the development of the survey instrument focus groups were conducted comprising of 6 to 8 participants representing each year. The focus groups provided an open forum for discussing perceptions of what constituted a good teacher. Semi-structured interview questions were used. The benefit of the focus groups was that the group social dynamics brought out aspects of the topic that would not have emerged from individual interviews. The skills of the facilitator were used to manage the group dynamics to ensure the trustworthiness of the data. The discussions were recorded and transcribed. The aim of the focus groups was to generate a facilitated group discussion, revealing possible variables and considerations. The participants were recruited through email, using natural group formation constructing groups according to year of study.

The Year 1 and 2 cohorts were grouped together (FG1), as were the Year 3 and 4 cohorts (FG2), creating a balance of power and knowledge in the groups, yet still allowing cross-fertilising of ideas. A process of: coding, conceptually organising ideas, interrelating

broad categories, assigning codes or themes, establishing commonalities and eliminating negative cases was followed. The data were used with literature to develop the survey instrument. Data from the focus groups were collected at Time 1 only (beginning of the year). Data was used 'as a post-research method to explain trends and variances, reasons and explanations for attitudes and opinions' (Sarantakos, 2005, p. 195). This was not the original intention; however, the data obtained provided a rich and comprehensive view of the pre-service teachers' beliefs, including personal stories, attitudes and opinions that helped to explain trends and variances obtained. Data were compared and contrasted, identifying shifts in perceptions across the degree. These patterns and observations would later be used to reinforce and clarify findings from the analysis of the quantitative data.

The researcher identified 51 descriptive categories from the focus groups, that were then divided into a series of descriptive statements and organised into categories, which included: content/knowledge; interpersonal; management/organisation; instructional techniques (pedagogical) and professional. The categories were used to guide the scope and style of the survey instrument.

The survey was developed from the focus group data, the literature and sample questions in validated survey instruments (e.g. Nausheen and Richardson, 2010 & Loughran, 2007). The mixed-methods approach is based on the Exploratory Design Model outlined by Creswell et al. (2003, pp. 75–79). The variation selected was the Exploratory Design: Instrument Development Model with an emphasis on quantitative data (Creswell et al., 2003, p. 76). The qualitative data were used to help explain and build upon the quantitative results. A trial of the instrument was conducted to ensure reliability ($n = 12$).

The survey instrument used a combination of Likert scales and questions to explore pre-service teacher's perceptions, using quotations, themes and categories to generate aspects of the instrument. The instrument was distributed to all participants, collecting data from beginning (pre) and end (post) of one academic year.

The response rate at the beginning of the year was significantly higher than at the end of the year, (beginning of the year easier to access whole cohorts in key lectures, end of year only able to access tutorial groups). The first distribution occurred in a single core unit at each Year level, (response rate=167/183 =91.3% Year 1– $n=54$, Year 2 – $n=35$, Year 3 – $n=31$, Year 4 – $n=47$). The second distribution took place in the last few weeks of Semester 2, across a greater number of tutorial groups (response rate=87/129=67.4%, Year 1– $n=34$, Year 2 – $n=20$, Year 3– $n=10$, Year 4 – $n=23$). The percentage attrition between pre and post surveys was 29.5% (54 participants) across the whole course, this was due to the emphasis on science based content in Years 1 and 2, the higher than 50% required to pass science courses and subsequent high fail rate. Majority of participants identified as Anglo-Saxon. Males made up 45.7 % and females 54.3 % at Time 1 and at Time 2 males 46.5% and females 53.5 %. The majority of participants were in the 18–24 age group (78.5 % at T1 and 76.7 % at T2).

The survey was divided into key sections: demographics (age, gender, previous qualifications and socio-cultural); views on a good teacher; knowledge; interpersonal skills; classroom management; pedagogical practices and professional characteristics. The instrument consisted of pre-coded or closed questions standard responses with some unstructured parts in each section. Participants were asked to select specific statements and rank the top five or to select their level of agreement. Sampling all four year cohorts allowed observations to be made at different points in the program. Data sets were collected and analysed separately.

Statistical analysis involved descriptive statistics and inferential statistics. A factor analysis was conducted. Principal component analysis (PCA) with Orthogonal (Varimax) rotation was used using SPSS version 16.0 on 41 items from the Quality Teaching Survey on a sample of 111 students. This number was less than the 167 sample at Time 1 as outliers (a variable with a low squared multiple correlations) were detected and deleted from the analysis. For the PCA the outliers reflected survey responses that were not fully completed.

For other analyses the specific completed components of these were analysed, but for PCA a complete set of data was required. The PCA results were derived from a representative sample.

The six-factor orthogonal solution was selected because this solution was the most consistent with the theoretical underpinnings of this study and had the clearest structure. The six-factor solution accounted for 49.5% of the variance in the original items, a higher variance than 4, 5 or 7 factor solutions. Overall, variables were well defined by the factor solution as 83% of the items had a communality value of 0.40 or above. Inspection of the rotated component matrix revealed moderate to high loadings for each item on at least one factor. Overall, 93% of items loaded onto one factor were greater than 0.40.

The six components include: 1) *views on professional and interpersonal characteristics*; 2) *views on pedagogical approaches: students/resource-centred*; 3) *views on content knowledge*; 4) *views on pedagogical professional practice*; 5) *views on teacher knowledge*; and 6) *views on the use of textbooks and activity sheets*. Although it appears factor 6 could be subsumed into factor 2, the factor analysis identified these as separate factors. Simply combining two factors does not imply a 5 factor solution.

Demographic testing against the six factors included a one-way analysis of variance (ANOVA) with the purpose of detecting differences in group means, and a t-test determine whether there was significant differences between two sets of scores. Follow-up pre- and post-testing was conducted against the six factors. They included t-testing, one-way ANOVA and correlations, examining the relationships between variables in a linear fashion. Statistical analysis also included descriptive tests, with the aim of exploring the dataset, summarised and describing the data findings and making some general observations, for example, number of males, females, age range and averages (mean).

The stages of analysis include: quantitatively analyse the data from the survey instrument and the focus groups. The final stage was connecting the findings from the survey with the focus groups, using significant statements or quotations to draw conclusions and form interpretations.

Survey data (quantitative) were analysed using SPSS program—factor analysis produced themes or categories; trends and significance were identified. Focus group data (qualitative) and survey data (quantitative) were analysed then connected together in the discussions. Interpretations of results of the pre-service teachers' data both qualitative and quantitative were explored against the research question.

Findings

The research questions asked participants to identify those teacher qualities they identified as most valuable. Pre-service teacher's replies were multifaceted, covering three main categories: knowledge; pedagogy and interpersonal/professional qualities. For the purpose of this paper, relevant findings from the data sets have been used. The main data set was the quantitative data with the qualitative data used to complement or clarify statistical findings. The data sets were combined in the discussion to describe the story of the pre-service teachers changing perceptions.

Outlined are the changes in perceptions that occurred, illustrating the pre-service teachers shift from ego-centric beliefs to student-centric practices. Three distinct changes occurred. The first change was viewing teaching as, 'my' personal performance, 'my' interpersonal skills to 'our' (students and teacher) performance. The second change was the focus on technical skills, techniques or strategies for engagement, to teaching qualities that involved ethical, moral and personal responsibilities. The third reconstruction involved the pre-service teachers viewing 'good' teaching as student motivating (deep purposeful learning) rather than just short term student engagement.

A shift from ‘me’ to ‘me and them’

To describe the repositioning of perceptions from a focus on personal performance to student-centred learning, the statistical tests identified significance and changing patterns in the factor – *interpersonal and professional characteristics*, with the five common first choice characteristics presented in Table 3.1.

Interpersonal quality most useful	Time 1 Years 1–4 (total)	% Time 1	Freq. Time 1	Time 2 Years 1–4 (total)	% Time 2	Freq. Time 2	% diff.	χ^2	P
<i>Challenges and encourages students</i>	1 (49)	14.3.	7	1 (35)	8.6	3	-5.7	0.8	ns
	2 (38)	13.2	5	2 (18)	22.2	4	+9	1.10	ns
	3 (28)	21.4	6	3 (12)	8.3	1	-13.1	2.57	ns
	4 (41)	12.2	5	4 (17)	5.9	1	-6.3	0.55	ns
<i>Helps students develop self-esteem</i>	1	10.2	5	1	8.6	3	-1.6	0.09	ns
	2	15.8	6	2	5.6	1	-10.2	1.19	ns
	3	14.3	4	3	16.7	2	+2.4	0.05	ns
	4	12.2	5	4	11.8	2	-0.4	0.002	ns
<i>Employs knowledge of students to facilitate learning</i>	1	8.2	4	1	11.4	4	+3.2	0.44	ns
	2	10.7	3	2	16.7	3	+6	0.59	ns
	3	10.7	3	3	16.7	2	+6	0.41	ns
	4	4.9	2	4	12.2	0	+7.3	1.65	ns
<i>Projects enthusiasm for teaching</i>	1	9.6	5	1	8.6	3	-1	0.04	ns
	2	3.6	1	2	16.7	3	+13.1	8.5	<0.01
	3	3.6	1	3	3.6	0	-	0.43	ns
	4	17.1	7	4	11.8	2	-5.3	0.28	ns
<i>Sensitive to students needs and concerns</i>	1	8.2	4	1	14.3	5	+6.1	1.58	ns
	2	7.9	3	2	16.7	3	+8.8	1.76	ns
	3	10.7	3	3	16.7	2	+6	0.41	ns
	4	2.4	0	4	17.6	3	+15.2	16.9	<0.001

Table 3.1 Comparisons of the Most Common Interpersonal Qualities at Time 1 and Time 2, Years 1–4

The participants were asked to rank from one to five those interpersonal qualities that they believed were most useful as a teacher. A chi-square test was conducted across all four years at Time 1 and Time 2, to test for the overall distribution of the first choice. Analysis of variance showed small but important differences between Time 1 $\chi^2(42 N = 156) = 47.84, p = 0.248$ and Time 2 $\chi^2(42 N = 82) = 41.65, p = 0.486$. These qualities varied to some degree from Time 1 to Time 2 in Table 1 (see Table 3.1).

A follow-up chi-square test was used to test for significance from Time 1 to Time 2 over Years 1–4 ($A \chi^2 \text{ test} = \sum (O - E)^2 \div E$). Significance was identified for, *projects enthusiasm for teaching* Year 2 $p < 0.01$ and *is sensitive to students needs and concerns* Year 4 $p < 0.001$ (see Table 3.1). This result illustrated significant changes in perceptions at Time 2 in specific Years in the program. In Year 2, the important interpersonal quality was *teachers’ enthusiasm*. While in Year 4 at Time 2, being sensitive to *student needs and concerns* was most important. This results show changes in patterns across a year and over the four years of the program (see Table 3.2).

Interpersonal qualities ranked most useful	Time 1	Time 2	% diff
<i>Sensitive to students' needs and concerns</i>	15.9	7.1	-8.8
<i>Challenges and encourages students</i>	11	14.7	+3.7
<i>Helps students develop self-esteem</i>	9.8	12.8	+3
<i>Shows and expects respect</i>	1.2	10.3	+9.1
<i>Employs knowledge of students to facilitate learning</i>	11	8.3	+2.7
<i>Projects enthusiasm for teaching</i>	9.8	9	-0.8
<i>Is warm and friendly, firm and reasonable expectations</i>	8.5	5.1	-3.4
<i>Encourages students to take on responsibility</i>	6.1	4.5	-1.6
<i>Is flexible—able to change and adjust</i>	6.1	5.1	-1

Table 3.2 Overall Comparison of Interpersonal Qualities Most Often Ranked as First Choice for all Years 1-4

Most of the interpersonal qualities were identified as important at some point reducing the power of any one quality. The pre-service teachers' views on teaching were becoming more student-centric in later years, for example there was an increase at Time 2 in item: *helps students develop self-esteem; employs knowledge to facilitate students' learning, and challenges and encourages students.*

A similar shift in thinking from individual 'me' to thinking 'me and my' occurred in the qualitative data. In FG1 participants believed that successful teaching relied heavily upon their own enthusiasm for teaching and personal performance in the classroom, referring to: 'my confidence', 'my energy' and 'my ability to relate to kids'. They wanted to be able to encourage learning by showing an interest in the students as well as the subject area. As one respondent in Year 1 noted, 'say – if the teacher has no interest in what you do then you show an interest in what they are teaching you' (FG1 # 1).

By the latter Years (Years 3 & 4) participants focus was on participation and getting to know the students in their classes (needs, concerns and interests), this involved the teacher being actively engaged in the classroom. One respondent explained: 'effective teachers get involved, move around the class actually talk to each other, don't just stand around—talk to them see what they are up to, ask what their ideas are' (FG2#2).

Focus Group 2 participants had become more student-centred in their teaching. Their concern was not just about personal performance; teaching now involved both the teacher and the learner. Another student underscored this by stating: 'to understand where *they* are coming from, a lot of the time it's the best way to get through to *them*—coming down to their level' (FG2# 2).

From Functional ('Bag of Tricks') to Personal and Ethical Responsibilities

Participants did change their views with an increase focus on professional and ethical responsibilities in Years 3 and 4. To illustrate this change, it is important to look at the changes that occurred in the factors identified in quantitative data as: *pedagogy* and the descriptive statistical test that asked participants to rank the qualities of a 'good' teacher (see Tables 3.3 & 3.4)

Pedagogical approaches ranked as most relevant/important	Time 1 Years 1-4 (total)	% T. 1	Yearly Freq. T.1	Time 2 Years 1-4 (total)	% T. 2	Yearly freq. T. 2	% diff.	2	P
<i>Uses high-</i>	1 (52)	23.1	12	1 (32)	15.6	5	-7.5	0.774	ns

<i>interest</i>	2 (35)	20.0	7	2 (18)	11.1	2	+8.9	0.711	ns
<i>lessons—</i>	3 (28)	50	14	3 (12)	8.3	1	-41.7	4.17	<0.05
<i>interactive,</i>	4 (29)	18.2	6	4 (14)	31.3	4	+15.1	0.827	ns
<i>student interest</i>									
<i>high</i>									
<i>Uses a range of</i>									
<i>teaching</i>	1	21.2	11	1	18.8	6	-3.4%	.091	ns
<i>strategies</i>	2	22.9	8	2	22.2	4	-0.7%	.004	ns
	3	7.1	2	3	50.0	6	+42.9	31.1	ns
	4	30.3	9	4	12.5	2	+17.8	1.18	ns
<i>Plans lessons</i>	1	17.3	9	1	9.4	3	-7.9	1.16	ns
<i>that are relevant</i>	2	8.6	3	2	22.2	4	+13.6	8.51	<0.01
<i>to students</i>	3	14.3	3	3	8.3	1	-6	.301	ns
	4	9.1	3	4	18.8	3	+9.7	2.36	ns
<i>Adapts teaching</i>	1	11.5	6	1	25.0	8	+13.5	5.07	<0.05
<i>to students’</i>	2	8.6	3	2	11.1	2	+2.5	.131	ns
<i>learning styles</i>	3	3.6	1	3	8.3	1	+11.9	.747	ns
	4	15.2	4	4	0.0	<1	-15.2	2.13	ns
<i>Adapts teaching</i>	1	0.0	<1	1	6.3	2	+6.3	0.0	ns
<i>to their</i>	2	11.4	4	2	11.1	2	-0.3	.001	ns
<i>environment/</i>	3	3.6	1	3	0.0	<1	-3.6	.432	ns
<i>context e.g.</i>	4	9.1	2	4	6.3	<1	+2.8	1.27	ns
<i>caters for</i>									
<i>special needs</i>									
<i>A student-</i>	1	3.8	2	1	0.0	<1	-3.8	1.22	ns
<i>centred</i>	2	11.4	4	2	5.6	1	-5.8	0.540	ns
<i>approach</i>	3	7.1	2	3	8.3	1	+1.2	0.026	ns
	4	0.0	<1	4	12.5	2	+12.5	0.0	ns

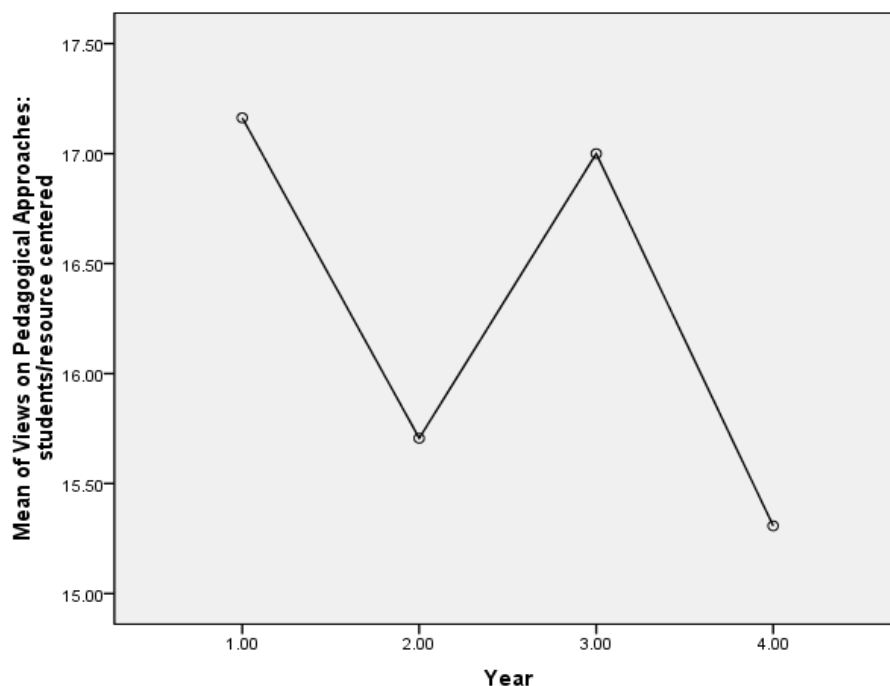
Table 3.3 Comparison of Common Pedagogical Approaches ranked first choice at Time 1 and Time 2, Years 1–4

Several findings are of interest in the changes that occurred in pedagogy in Years 1 and 2, *adapts teaching to students’ learning styles* ($P = >0.05$) and *plans lesson that are relevant* ($P = >0.05$) were identified as significant, whereas by Year 3, significance was identified for only *uses high-interest lessons* ($P = >0.05$) (see Table 3.3).

In the early years pre-service teachers wanted to ‘adapt’ *their* teaching and plan lessons so they were relevant to students. However, by Year 3 the emphasis had changed as the pre-service teachers started to consider how their teaching could align *with* student interests and needs.

A one-way ANOVA was conducted to compare the means of the *pedagogical approaches* factor over the four years of the degree. A follow-up *post hoc* analysis was conducted on pedagogical approaches identified as significant. Mean differences were identified for the following $F(3, 137) = 2.76, p < 0.05$ *views on pedagogical approaches*. The test results suggest that there is a mean difference in the responses of participants' views on the importance on the use of *pedagogical approaches* in Year 1 compared to Year 4 $p = 2.48$. The mean plots (see Figure 1) show the participants changing views on *pedagogical approaches* from Year 1 to Year 4 (see Figure 3.1). Key pedagogical coursework and professional experience occurred in Year 3, this impacted on the pre-service teachers viewing pedagogy as most importance at this time.

Fig. 3.1. Mean plots: Views on pedagogical approaches Years 1-4



By the end of 4th year the importance of pedagogy had waned as professional factors began to take precedence and the pre-service teachers gained experience (confidence) with pedagogy.

The pre-service teachers were asked to rank from one to five those teacher qualities that believed were most important for a 'good' teacher, from 20 possible choices (see Table 3.4).

Most important teacher quality	Time 1— year (total)	%	Yearly freq. T1	Time 2— year (total)	%	Yearly freq. T2	% diff.	Z	P
<i>Is confident, energetic and relates well to students</i>	1 (49)	44.9	22	1 (37)	48.6	18	+ 3.7	.116	ns
	2 (37)	35.1	13	2 (18)	38.9	7	+ 3.8	.073	ns
	3 (28)	50.0	14	3 (12)	50.0	6	0	0.0	ns
	4 (38)	46.5	20	4 (16)	33.3	6	-13.2	.232	ns
<i>Understands students and makes their teaching relevant</i>	1	6.1	3	1	8.1	3	+ 2	.242	ns
	2	29.7	11	2	11.1	2	-18.6	2.10	ns
	3	0	0	3	8.3	1	+ 8.3	0.0	ns
	4	4.7	2	4	27.8	0	+ 23.1	0.75	ns
<i>Has a thorough understanding of their subject area</i>	1	14.3	7	1	8.1	3	-6.2	.991	ns
	2	2.7	0	2	.0	0	-2.7	0.49	ns
	3	10.7	3	3	.0	0	-10.7	1.28	ns
	4	4.7	2	4	.0	0	-4.7	0.75	ns
<i>Is organised</i>	1	2.0	1	1	.0	0	-2.0	0.74	ns
	2	0	0	2	5.6	1	+5.6	0.0	ns
	3	14.3	4	3	.0	0	-14.3	1.72	ns
	4	4.7	2	4	5.6	1	+9	.083	ns
<i>Enjoys students and makes lessons fun</i>	1	4.1	2	1	.0	7	-4.1	19.75	<0.001
	2	2.7	1	2	.0	7	-2.7	86.49	<0.001
	3	3.6	1	3	8.3	1	+4.7	0.76	ns
	4	2.3	1	4	5.6	7	+3.3	118.8	<0.001

Table 3.4. Comparison of Time 1 and Time 2, Years 1–4, qualities ranked as first choice for the ‘Good Teacher’

Being *confident, energetic and relaxed* was important to the pre-service teachers in all years and most important in Years 1 and 4 at Time 1 (see Table 3.4). For the pre-service teachers this quality highlights their optimism and the importance of *their* energy as teachers. By Years 3 and 4 an energetic teacher also needed to know their students. As described by a student in Year 3: ‘you don’t want to be in a position where the kids know more than you ... also knowing the content, knowing the kids and being energetic about it’ (FG1#2). Overall, no significance was identified from Years 1–4 as the test had 16 different teacher quality categories reducing potential significance. Changes occurred as additional qualities were selected in years 3 and 4 (see Table 3.4).

A chi-square – 2 test – $2(O - E)^2 \div E$ was used to test for significance from Time 1 to Time 2, Years 1–4 in what makes a good teacher (see Table 3.4). The quality *enjoys students and makes learning fun* was identified as being significant in: Years 1 $p < 0.001$, Year 2 $p < 0.001$ and Year 4 $p < 0.001$. In each case, the frequency increased from Time 1 to Time 2; this is attributed to the importance placed on lessons enjoyment. In Years 3 and 4 it was becoming important to have an understanding of students’ background and interests. As illustrated by a final year pre-service teacher: ‘being able to build rapport with kids, easily talk on their level, have a sense of humour ... understanding where they are coming from. A

lot of the time it's the best way to get through to them—coming down to their level' (FG2 #5).

The pre-service teachers believed that a 'good' teacher *understands students and makes their teaching relevant*. In the early years of the degree; this involved focusing on *their* ability to select relevant content or strategies. By Year 4 the pre-service teachers wanted to understanding the *needs of individual students*, how *they* learn, what approaches work for *them*, what *they* were interested in, what prior knowledge did *they* have. One way of achieving this was by revealing more of their own personalities and interests. As a student in Year 4 noted: 'you have to show kids that you are a learner also that you don't know everything' (FG2#7), they wanted to show students that they were human, with a passion and interest in teaching.

In contrast, in Years 1 and 2, it had been about them as a future teacher, what knowledge and skills did they need to gain. As one first year student commented: 'if you have the skills to demonstrate the right actions and how to do it—then you have the knowledge and skills to get students to understand what you are trying to teach them and that makes a good teacher' (FG1 # 4).

By Years 3 and 4 the pre-service teachers believed it was their professional and ethical responsibility to inspire students' interest in the subject. As one respondent explained, 'I kept saying to them it's your participation that matters most to me' (FG2#1).

From Engagement to Motivation

There was a conceptual shift from lesson/student engagement to the seeing the importance of student motivation for successful teaching. It is useful to look at the patterns and trends that occurred in the descriptive results of two of the items in the survey: views on *interpersonal qualities* and views on *pedagogical qualities* to show how this change was occurring (Tables 3.1 & 3.3).

In earlier discussion on the item - views on *interpersonal qualities*, statistical significance was identified from Time 1 to Time 2, *for project enthusiasm for teaching* (Year 2) and *sensitive to students' needs and concerns* (Year 4) (see Table 3.1). These two variables are of particular interesting in exploring the change of perceptions from student engagement to student motivation. This change is illustrated in extracts from the two focus groups.

Extract 1: Year 1

'Effective teachers get involved, move around the class actually talk to each other, don't just stand around—talk to them see what they are up to, ask what their ideas are'. For beginning pre-service teachers they believed it was important to engage with different students, different genders and international students and those who were not athletes' (FG1#6).

By the latter years being *sensitive for needs and concerns* had developed into a deeper more emotional student-centred position beyond just adapting pedagogical practices, for example:

Extract 2: Year 4

'You need to show an interest, respect opinions, talk AND listen ... speak to them not at them, speak their language, laugh with them, be empathetic' (FG2#1).

What changed for this group over time was not 'passion' per se, but how this passion is displayed. Initially, they believed that this was about being *positive, confident* and *in control*. This is underscored by one pre-service teacher in Year 2 who stated: 'as teachers you have to be positive but you also have to have discipline' (FG1#2). At the beginning of the course the pre-service teachers wanted to have 'expert' knowledge and skills, viewing this as source of power in the classroom. One pre-service teacher interpreted this as: 'then if *you*

have knowledge and skills to get students to understand what you are trying to teach them that makes a good teacher' (FG1 #4).

In contrast in the latter years the views had broadened on what teacher 'passion' and student motivation would look like. It was still personal but it now involved the students, their needs and interests, an ethical requirement. As a final year pre-service teacher described: 'you don't have to be brilliant just a desire to teach—relate to student, interest and passionate' (FG2#2). This group identify specific skills that help to convey passion: 'effective teachers needed 'people skills, management skills, communication skills planning skills, behavioural skills' and a genuine desire to teach (FG2#6).

Comparing participants' first choice of pedagogical approaches is useful in illustrating the change of strategies the students were seeing as important at the beginning and end of each year and over the years as their context changed with different coursework and more demanding professional experience.

A chi-square test was conducted to identify the overall distribution of what was ranked first choice most often across all four years at Time 1 and Time 2 (see Table 3.3).

A series of chi-square tests were used determine whether certain qualities ranked consistently more important/relevant than others across the whole dataset at Time 1 $\chi^2(30, N = 148) = 39.29, p = 0.119$, Time 2 $\chi^2(30, N = 78) = 29.92, p = 0.575$ and from Time 1 to Time 2, across Years 1–4 A χ^2 test – $\frac{2(O - E)^2}{E}$. Significance was identified for the following: *uses high-interest lessons—interactive, student interest* Year 3 $p < 0.05$; *plans lessons that are relevant to students* Year 2 $p < 0.01$; and *adapts teaching to their environment/context (for example, caters for special needs)* Year 1 $p < 0.05$ (see Table 3.3).

Year 3 was an important 'window' in the degree for the pre-service teachers as they repositioned and reconstructed their ideas on teaching. The loss of intensity of what they believed was important did fluctuate this can be seen with the changes from Time 1 to Time 2 however, core beliefs often reoccurred over time either by being reinforced through success in practice or replaced when challenged or when better alternatives were found.

In Years 1 and 2 *high interest lessons* were about technical modifications. As one respondent noted, 'make sure you do modified games and practice to suit students' interests' (FG1#1).

By Year 3, the pre-service pedagogy ideas were changing, interesting lessons according to a Year 3 pre-service teacher involved: 'collaborative more relaxed approach, it works a lot better than just saying you will do as I say, you will do this and this is how it's going to be and they are not even allowed to interact—total silence' (FG2#5).

In the beginning years, the pre-service teachers wanted to have a range of teaching approaches so as to engage and help with student learning, for example. As one first year pre-service teacher commented: 'so when I am teaching swimming if a kid doesn't get it right away I might think of another way to explain it'(#3). By Year 4, catering for difference involved more than selecting another strategy. It involved wanting to be 'open' to individual needs, ready to modify or adjust their teaching as needed. As a final year pre-service teacher stressed what was important to her was, 'a willing [ness] to be open minded, different people have different learning styles ... you have to cater so that students ... get the most out of the lesson, you need to adapt to different situations' (FG2#4)

It was in Years 2 and 3 that the majority of the pre-service teaching pedagogical learning and practice occurred. The participants in Years 1 and 2 saw student engagement as involving interactive strategies, as noted by a pre-service teacher in Year 2: 'effective teachers use interactive style—group work, listen to students, others ideas, they don't just have one approach one idea' (FG1#2). By Years 3 and 4 participants saw relevance as not only important to engagement but essential to motivation, involving the whole learning experience, not just a single strategy or lesson. For one pre-service teacher in Year 3 this idea carried over into their second teacher area, he commented: 'I remember teaching social

science, I tried to make it as interactive and engaging as possible rather than just sit there working out of a textbook because students don't respond' (FG2#3).

Limitations of the Study

The study focused on secondary teacher education issues rather than those specifically PDHPE teachers. The limited time and access to informants for each pre- and post-survey meant that decisions had to be made in relation to: the number of focus groups held and the use of a 'snapshot' survey approach, instead of a longitudinal enquiry, which would have had higher attrition rates and taken a longer period of study. Focus groups were conducted at Time 1 only with a representative sample of participants across the four years. The reason for this was that the focus groups were originally designed to support the development of the survey however, the richness of their responses enabled this data to be used to clarify the quantitative findings, this could be viewed as a possible limitation. It is important to signal that some assertions although relevant to this study group may not be representative of all secondary pre-service teachers due to inherent limitations noted, however broad assertions can be drawn from the findings.

Discussion

This study sought to examine changes in perceptions of pre-service teachers, how their views on teacher qualities were being constructed and changed as they moved through their degree. The pre-service teacher entered the course with strong ego-centric views on what were the important teacher qualities (e.g. energetic, relevance, enthusiastic) to have. These preconceived ideas of 'good' teaching stem from their own social-cultural histories, derived from viewing themselves as members of a specific group (PDHPE teachers) (Carter & Goodwin, 1994; Olsen, 2008; Sfard & Prusak, 2005). This was important in shaping their beliefs as teachers as they engaged in the coursework and on professional experiences. The pre-service teacher became more student-centric in their thinking and practices as they were exposed to new experiences.

The journey for pre-service teachers, their development and growth is governed and directed by what they saw as important to their practice based on their experiences (Loughran, 2010; Mason, 2002; Myers & Simpson, 1998). This belief is supported by the changes in the quantitative data patterns from Time 1 to Time 2 and from Years 1-4. Supporting the interpretation of these patterns of changing perceptions is the qualitative data from the focus groups. By Year 4 the focus had changed from individual performance, to the importance of viewing their teaching within the frame of their students' learning. It can be suggested that this process involved the pre-service teachers in reflecting thinking particularly, during professional experience, where the construction of new knowledge of teaching is based on what was seemed to be working in the classroom. The focus shifted from acquiring technical expertise (strategies and approaches) to the importance of being an ethical, professional teacher. This marked a period of consolidation and developing professional maturity for the pre-service teachers. Effective teaching was no longer simple viewed as student engagement—how can I keep them on task? They now wanted to be skilful, reflective practitioners—what will motivate my students towards purposeful learning? Being sensitive to students' needs and concerns and having lessons that were interesting for the students were identified as important qualities for ensuing student motivation.

The pre-service teachers were actively engaging in metacognition, they were self-monitoring and self-regulating, questioning their own thinking and practices about teaching and learning, they were changing their minds on important qualities e.g. 'effective teachers use interactive style.....listen to students....they don't just have one approach' (FG2). Joyce and Showers (2002) described this development of perceptions as iterative, experimental and reflective. The changing patterns that occurred for the pre-service teachers casts an interesting light on established models of pre-service teacher development often viewed as learning in a linear fashion, 'fixed, invariant, sequential and hierarchical' (Richardson & Placier, 2001, p.910). Indeed, in this study development did not necessarily occur in a linear fashion, rather it could be viewed as a cyclic consisting of on-going change, whereby views on 'good' teaching, those qualities seen as most important, were reframed as perceptions changed, with new experiences challenging or reinforcing original held beliefs. This highlighted changes in ego-centric to student-centric patterns for example, *interpersonal and professional qualities* increased in importance, revealing a growing professional maturity.

The course structure and professional experiences were designed to scaffold the pre-service teachers learning. The first two years of the program were heavily content focused; as such the pre-service teachers believed it was most important *for them* to have expert knowledge in subject content. Year 2-3 had a focus on pedagogy and early practice. This was their first exposure to schools and teaching, as such, there was the need to be an interesting teacher with effective pedagogy. By the end of their course, the pre-service teachers were looking beyond their own performance in the classroom. They were being exposed to coursework in special needs and professional practice had become high stakes – it was no longer just about my performance it was about the performance of the students. This result corroborates similar studies of pre-service teacher perceptions, which found that pre-service teachers in the beginning of their degrees tended to focus on teacher personality rather than guiding students in purposefully learning (Committee for the Review on Teacher Education, 2005).

The pre-service teachers were searching for more sophisticated ideas and understandings of student learning. It was important to them to be encouraging, friendly and enthusiastic. However, to be really effective they believed that they needed to also address the needs of their students. Atkinson and Claxon, (2004) refers to this as reflection that is consciously and functionally intuitive. The pre-service teachers were building interconnections between theory and practice and reality, underpinning their understandings of teaching.

The pre-service teacher's beliefs and ideas about teaching were adopted from their own personal histories and biographies and unless challenged many of these ideas continue to resist change, this view is supported in the literature (Fajet, Bello, Leftwich, Mesler, & Shaver, 2005). This resistance was evident in this study for example, the pre-service teachers identified a 'good' teacher as someone who is energetic and makes lessons fun, this was most important to the study group and was to remain consistently so. Being energetic and having fun in its self is not an issue. However, if the aim of specific coursework is to expand pre-conceived conceptions on good teaching, beyond just having fun then careful scaffolding and learning is needed to change firmly entrenched narrow belief systems. Darling-Hammond and Bransford, (2006) refer to the practice as developing a 'professional identity' seen as an important in ensuring teachers commitment to their professional work and adoption of professional norms of practice. The pre-service teachers in this study were forming their own vision of what teachers do, what is good teaching, to guiding their own practice and expand their beliefs. The timing and selection of key coursework needs to be considered if this is to occur. Too often important 'thinking' courses are offered too early in a program or in final semesters when students are disconnecting from theory as they focus on the practice of teaching.

In the beginning of the program the pre-service teachers believed that it was important to engage students in subject content. A repositioning of views occurred in Years 3 and 4 with the pre-service teachers deciding that content knowledge alone was not enough to motivate students to learn deeply they needed to cater for their needs and interests (e.g. *understand their student* and *provide relevant learning opportunities*). They believed they could do this by *having knowledge of individual students, showing students respect and being sensitive to students' needs*. This could be viewed as the development of teacher dispositions being able to evaluate ones practice to search for answers in order to reach all students both at a classroom and school level (Committee on Teacher Education, 2005; Diez, M, 2007).

This reframing of teacher identity towards a student-centred orientation of caring and ethical practices had important implications for human relationships the pre-service teachers were developing in teaching. The pre-service teachers' identities were broadening as they engaged in new experiences and encountered the complex and demanding requirements of teaching. Successful and satisfying teaching had acquired a moral aspect as well as the intellectual work that the pre-service teachers were investing into their teaching. It is suggested that they were wanted to be seen as enthusiastic, intelligent teachers as well as principled professionals e.g. 'being able to build rapport.... understand where they are coming from...'.

The pre-service teachers were reconstructing their ideas on the purpose of teaching, teaching was no long viewed as absolute or complete, it was evolving, adapting and changing. The pre-service teachers were trying to make sense of their experiences as teachers they were being influenced by internal, external and differing school/classroom contexts they were encountering e.g. 'You need to show and interest, respect opinions talk and listen....speak their language...'.

For the pre-service teacher planning relevant lessons had changed to planning and adapting my teaching to suit students and the environment. The emphasis in the beginning years had been on the 'teacher' developing *high-interest lessons, being organised, being well planned*. This changed in Year 3, the pre-service teachers wanted to work collaboratively with students and staff, they had began to conceptualising theories, creating connects between coursework theory and practices; they wanted to show that they could *adapt teaching and learning to suit specific contexts and individuals*. In making the connection the pre-service teachers were acquiring a shared language of practice, showing a more student-centred approach to their teaching. Zwozdiak –Myers (2012) refers to this form of development as 'surface to deep', as 'transformational learning' (p. 27).

By Year 4, the pre-service teachers had begun exploring ideas around student motivation, developing pedagogical content knowledge and interpersonal strategies that would assist them to challenge students, develop students' self-esteem and to use their knowledge of the students to create enthusiasm for learning. The results suggest that in this study, pre-service teachers were capable of giving serious consideration to the learners in their classroom and had built upon earlier thinking about teaching pedagogy. The pre-service teachers had shifted their views to consider 'teaching as an interactive practice that begins and ends with seeing the student' (Ayers, 2001, p. 25). They were consolidating their ideas and even though they still wanted to have fun, be energetic and relaxed, they also wanted to inspire and motivate their students. They wanted to be learner-centred, relevant and authentic; they believed this would motivate and engage students in deep and meaningful learning. Being responsive to the differing needs of the students in their classrooms was an expectation both inferred (coursework) and stated (graduate standards during practicum), necessary mastery for the graduate teacher.

Conclusion

This study shows how the pre-service teachers' perceptions change from an ego-centric position to a more student-centred approach during their degree. Being aware of the development of pre-service teachers has the potential to enhance the quality of teaching and teacher education, to support pre-service teachers as they reconstruct and reframe their ideas about teaching. The timing and scheduling of core coursework (e.g. Catering for Difference, Aboriginal Education, Educational Foundations, Behaviour Management and Social-Cultural Studies) are important if core understandings are to be adopted into practice. Year 4 is often too late for important conceptual theory to be enacted into practice and built into the pre-service teachers' professional ethos. It is important to support, scaffold and to provide the skills necessary for reflective practice, if pre-service teachers are to engage in important 'thinking' both during and after professional experience. Indeed, the changing patterns in the data suggest a need to be aware of not only the preconceived ideas that pre-service teachers bring with them into a course but also the changes in perceptions may or may not be occurring. This understanding is important at a time when pre-service teachers are being increasingly measured against prescribed standards of graduate practice thus, it is particularly important to have an understanding of beginning teacher development, what they know and what they believe they need to learn.

A shared understanding helps to take into account the pre-service teachers social-cultural histories and preconceived beliefs and offers opportunity to address misconceptions and deepen teacher identities as professionals. The patterns that occurred in the qualitative data revealed that some ideas and attitudes are hard to change and some beliefs are actually reinforced by hidden agendas, mentors and existing school practices.

Years 2 and 3 was identified as a significant point in time in the course, where the pre-service teachers reflected, revised and reviewed, adopted or rejected ideas on favoured teacher qualities. This finding signals the need for further exploration of pre-service teachers' developing perceptions at specific points in teacher education courses. When sufficiently sophisticated and nuanced understandings about the pre-service teacher perceptions are developed, teacher education can move to genuinely meet the needs of pre-service teachers and thus better prepare them as professional teachers.

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