The Influences on Teaching Perspectives of Australian Physical Education Teacher Education Students: The First-Year Influences on Teaching Perspectives Exploratory (FIT-PE) Study

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Abstract: There has been a paucity of literature investigating the teaching beliefs and intentions of Australian physical education teacher education (PETE) students that enter teacher training. The First-year Influences on Teaching Perspectives Exploratory (FIT-PE) study explores the teaching perspectives of first year PETE students; including teaching perspectives predicted as being dominant and important for physical education teaching. The teaching perspectives inventory (TPI) was administered to 105 Australian PETE students. Independent t-tests and one-way ANOVA statistical tests were conducted to compare average teaching perspective summary scores across demographic variables. The FIT-PE study findings revealed 18 year olds (compared to 20-25 year olds) and PETE students from rural backgrounds (compared to regional) had significantly higher average summary scores for the transmission (content-oriented) teaching perspective. This paper provides reflective opportunities for teacher training programs of the underlying core teaching values (beliefs and intentions) of students at the entry point of PETE training.

Introduction

The importance of examining the teaching beliefs and intentions of physical educators is underlined by physical education (PE) teachers being potential gate-keepers to informing school physical activity policies, delivery, planning and implementation (Hyndman, Telford, Finch & Benson, 2012). With a potential to strongly influence the physical activity levels of young people and just 18% of children meeting the recommended guidelines of physical activity (Active Healthy Kids Australia, 2014), an early understanding of the teaching perspectives of our future PE teachers is valuable. Gaining insight into the teaching perspectives of PE teacher education (PETE) students is important to ensure teacher education programs are aware of the developmental needs of our future PE teachers. This is especially important as PE teaching often assumes an ambition to positively influence activity levels 'beyond the school gate' (Drummond & Pill, 2011). Identifying teaching perspectives (e.g. a lens of beliefs and intentions that provide direction to teaching) of PETE students is important to recognise how school physical activity and skill opportunities will be delivered both formally (e.g. PE lessons, school sport) (Hyndman, 2014) and informally (e.g. recess and after school time) (Hyndman & Telford, 2015) by our next generation of PE teachers. We agree with Wiegand, Bulger and Mohr (2004, p.7) that the nature of future PE programs will "depend on the insights and commitments of the professionals responsible for future curriculum decisions."

Physical Education Teacher Education students enter the 'starting blocks' of teacher education programs with a range of beliefs and intentions that have been established during their early years (Grossman, 1991; Pajares, 1992; Mills, 2006). It has been reported that the experience of PE within primary and secondary schools can have a greater impact than teacher education programs on forming the eventual practices of PE teachers (Jenkins, 2005;

Brennan, 2006). Indeed, it has been asserted that through the 'apprenticeship of observation' school experiences of PE are often more influential than pre-service and in-service teacher preparation in the practice of physical educators (McCormack, 1997; Jenkins, 2004; Brennan, 2006; Pill, Penney, & Swabey, 2012; Hyndman, 2014). It may be that the PE practices of pre-service teachers are frequently the product of tradition and habit rather than sound pedagogy (Kental, 2001). Such habits are reflected by PETE students beginning courses with clear ideas of what PE is or should be from the 'apprenticeship of observation' of their previous schooling experiences (Pill & Brown, 2007). Previous schooling experiences in sport and PE in which PETE students have been initiated are all factors that impact on the beliefs and intentions of pre-service teachers entering their degree (Capel, 2007). It has been found that in-service teachers in the United Kingdom have adapted, modified and re-created their curriculum to match such pre-existing teaching beliefs (Penney & Evans, 1997). Similarly, understanding the beliefs and intentions of PETE students can be significant in determining learning processes during their teacher education (Doolittle, Placek & Dodds, 1993; Courneya, Pratt & Collins, 2007). Teacher education programs can provide PETE students with the opportunity to confront these teaching beliefs and intentions by evaluating the appropriateness of such teaching perspectives during teaching practices (Minor et al., 2002; Wright, McNeill & Butler, 2004; Pill & Brown, 2007).

An awareness of the process in which physical educators are being socialised into the profession is an important consideration (Hopper & Sandford, 2006; Capel, 2007). By identifying first year PETE students' beliefs and intentions, teacher education programs can then provide a 'developmental overlay' via training that wasn't originally present when entering their degree (Collins, Jarvis-Selinger & Pratt, 2003; Hyndman, 2014). Pill and Brown (2007) described this as a "transformative process of forming socio-culturally responsive teacher professional identities" (p. 15). By re-forming PETE students from novice learners to active inquirers via socialising influences, the construction of a personal professional identity is possible (Pill & Brown, 2007). By gauging pre-service teachers' preconceived teaching perceptions, PETE programs can evaluate if such perceptions can be modified and provide awareness of perspectives that students tend to ignore. Pill et al (2012) revealed that teacher education programs can promote a shift in the knowledge and pedagogical boundaries of PETE students by providing opportunities to 'frame, disrupt and reframe' pre-established PE beliefs. By broadening and understanding teaching perspectives (Hyndman, 2014), pre-service teachers can become successful in-service teachers by providing a greater variety of teaching approaches (Minor et al., 2002; Fajet et al., 2005). Therefore identifying pre-service teachers' perspectives at an early stage can ensure that all teaching perspectives can be considered and developed (Collins et al., 2003).

Different to a pedagogical approach to teaching which is a 'conscious activity...designed to enhance learning' (Watkins & Mortimore, p.3, 1999), a teaching perspective is a teacher's view of 'what it means to teach' (Collins & Pratt, 2010). Within teacher education programs, changes in teachers' behaviours are unable to be made without an understanding of the beliefs of pre-service teachers (Kagan, 1992). Teaching beliefs are what conceptualise teaching and what evolves with experience and reflects the experiences of pre-service teachers' schooling and home environments (Ng, 2010). Understanding pre-service teacher beliefs and intentions can provide insight into how the teaching and learning experiences of pre-service teachers can be enhanced (Schommer, 1993; Hofer & Pintrich, 1997). Teaching beliefs therefore have a major influence on teachers' training outcomes.

Teachers also require regular reflection on teaching practices (Brownlee, 2004). The processes of teaching and learning need to be regularly examined (Klatter et al., 2001) if PETE students' ideas about PE teaching at the commencement of their degree are to be critically assessed and possibly disrupted (Pill & Brown, 2007). Researchers suggest that

attention should be provided as to how PETE students can become reflective to inform potential socialisation of the values, beliefs and intentions of future PE teachers (Capel, 2007; Pill & Brown, 2007). Physical Education Teacher Education students entering a teacher training program that have similar beliefs and intentions to those in which they learn from (e.g. tutors and lecturers) could result in a reduced ability to adapt behaviours and teaching practices (Capel, 2007; Pill & Brown, 2007). The desire to fit into a particular learning context can also result in many pre-service teachers with a particular teaching perspective conforming with values being taught (Stroot & Ko, 2006). If one of the goals of PE training programs is to develop reflective education professionals, focussed approaches to learning and reflection of such underlying beliefs need to be promoted and understood (Gordon & Debus, 2002).

The First-year Influences on Teaching Perspectives Exploratory (FIT-PE) study fills an important gap in the literature by providing insight into teaching perspectives of first year PETE students entering their teacher training. No study to our knowledge has investigated which teaching perspectives first year PETE students perceive to be the most important for PE teaching or which are perceived to be the most dominant. The aim of this study was to explore the influences on teaching perspectives of Australian first year PETE students. The secondary aims were to determine PETE students' predicted and actual dominant/recessive teaching perspectives and which teaching perspectives are perceived to be the most important for PE teaching.

Research questions

- What background influences impact the teaching perspectives of first year PETE students as they enter teaching training?
- What do first year PETE students perceive as the most important teaching perspectives for PE teaching?
- What teaching perspectives do first year PETE students predict will be their most dominant and recessive?
- What are the actual dominant and recessive teaching perspectives PETE students possess?

Materials and Methods

Clearance from the University Human Research Ethics Committee and the head of department at the university was obtained prior to the commencement of the FIT-PE study. Australian first year PETE students (n=120) within the Bachelor of Education (Physical Education) were invited to complete the FIT-PE teaching perspectives study at the beginning of a program master lecture in which all students were expected to attend. The pre-service teachers received a plain language statement outlining the research with a participant consent form and the questionnaire distributed via a trained facilitator not involved in the FIT-PE study. After the administration, 105 PETE students completed the questionnaire (Consent rate: 88%). Within the questionnaire, demographic information (entry characteristics) were collected of the Australian first year pre-service PE teachers to gauge the influences on teaching perspectives. Postcodes during the PETE students' secondary schooling were used to determine whether they were located in low socioeconomic status (SES) area, average SES area or high SES area. Using the postcodes via the Socio-Economic Indexes for Areas (SEIFA) calculations (Australian Bureau of Statistics, 2015), low SES was defined as a

SEIFA of 850-950, average SES defined as 950-1050 and high SES defined as 1050-1150. The background demographic information collected included age (38.1% 18 years old; 46.7% 19 years old; 15.2% 20-25 years old), gender (49.5% male; 50.5% female), location of secondary school attended (18% metropolitan, 41% regional, 25% rural), type of secondary school (55.2% government, 25% catholic, 19.8% independent), secondary school gender distribution (12.5% single sex, 87.5% coeducational) and SES (21.6% from low SES; 69.6% from average SES; 8.8% high SES). Other background demographic information included tertiary entrance rank scores (15.8%: 40-60, 57.9%%: 60-80, 26.3%: 80-100), immediate family members that are teachers (36.5% yes, 63.5% no) and second/alternative teaching methods to PE (English: 9.6%; Health 44.2%; Maths 19.2%; Science 10.6%; Studies of Society and Environment (SOSE) 13.5%; Information Technology 2.9%).

The Teaching Perspectives Inventory (TPI)

The Teaching Perspectives Inventory (TPI) was used to determine the teaching perspectives of the Australian first year PETE students. The TPI has been shown to be a highly reliable and valid instrument for measuring teaching perspectives (Collins & Pratt, 2010). Evaluation from over 100,000 online respondents has revealed that the TPI possesses a strong internal reliability (Cronbach's alpha) across five teaching perspective scales (apprenticeship= .73, developmental= .70, nurturing= .82, social reform= .83 & transmission= .72) (Collins & Pratt, 2010). The five point likert scale TPI (strongly disagree to strongly agree) was used to assess the five different perspectives of what it means to teach among the first year PETE students. Due to the strong internal reliability of the beliefs and intentions sections of the TPI (Collins & Pratt, 2010) and limited teaching experiences of the first year PETE students, the actions section was not required in the present study.

A revised 30-item TPI (intentions and beliefs sections) was administered to the Australian PETE students; including three statements that were connected to each of the five teaching perspective scales (teaching perspective scores ranging from 6-30; see Table 1). The five teaching perspectives linked to the TPI include:

1. *The apprenticeship teaching perspective*: characterised by a procedure of accustomising students into a series of social norms and methods of working. For example, providing practical teaching opportunities to apply theoretical knowledge in 'real world' situations.
2. *The developmental teaching perspective*: assumes that for teaching to be efficient it must be prepared and conducted from the learner's viewpoint. For example, building upon previous levels of learning, developing thinking skills to negotiate complex tasks and reasoning.
3. *The nurturing teaching perspective*: assumes that a persistent and thorough effort to achieve originates from the heart, as well as the head. For example, having consideration for learners' emotions, building self-confidence and acknowledging learning efforts, rather than solely achievement.
4. *The social reform teaching perspective*: assumes that quality teaching seeks to modify society by awakening students to embedded values and ideologies. For example, focusing on teaching beyond the individual student level to challenge learners to reconsider their values and be committed to change societal ways.
5. *The transmission teaching perspective*: assumes that effective teaching requires a strong obligation to the subject matter and mastering the content prior to delivery. For

example, prioritising examinations and tests of content knowledge developed (Pratt et al., 2001).

A dominant teaching perspective was defined as a teaching perspective summary score that was higher than the other four teaching perspective scores. A recessive teaching perspective was defined as a teaching perspective summary score that was lower than the other four teaching perspective scores (Collins & Pratt, 2010). Within the questionnaires, the PETE students were asked to rank the likelihood of each teaching perspective being the most dominant (score of '1' for most likely to score of '5' for least likely). In addition, the PETE students were to rank the importance of each teaching perspective (score of '1' for most important to score of '5' for least important) noting whether they believed their dominant teaching perspective would change with further teaching experience.

Statistical analyses

All questionnaires were coded and data was entered into the Statistical Package for the Social Sciences (SPSS, Version 22) data analysis program. Normality of the data was checked by conducting a range of descriptive analyses. Data cleaning involved checking any unusual scores or missing values against the original survey and correct values were entered into the spreadsheet. Descriptive statistical tests were used to illustrate the proportions of demographics and the predicted importance/dominance of teaching perspectives within the sample. In order to gauge the influences on PETE students perspectives from different background/program entry characteristic influences (e.g. SES, university tertiary entrance rank, location of secondary schooling, type of secondary schooling, gender distribution during schooling, family members that teach and second/minor teaching method) a series of one way ANOVA and independent t-tests were conducted. Cross tabulation statistical tests were administered to gauge the proportion of Australian PETE students with dominant/recessive teaching perspectives, predicted dominant/recessive teaching perspectives and the perceived most important teaching perspectives for PE teaching.

Results
Individual Beliefs and Intention TPI Items from the Australian PETE Students

When examining the individual TPI 'beliefs' items, it was revealed that the PETE students possessed the highest scores for 'building self-confidence in learners' (nurturing), 'rewarding learning efforts' (nurturing), 'acknowledging learners' emotions' (nurturing), 'being an effective practitioner' (apprenticeship) and 'working alongside good practitioners' (apprenticeship; Table 1). In contrast, the lowest scores were for 'learning depends on what one already knows' (developmental), 'focusing on societal change, rather than individuals' (social reform) and 'knowledge and application can't be separated' (apprenticeship; Table 1).

For the individual TPI 'intentions' items, the PETE students possessed the highest scores for 'building self-confidence and self-esteem in learners' (nurturing), 'wanting people to score well on examinations' (transmission), 'providing a balance between caring and challenging' (nurturing) and 'expect people to enhance self-esteem through teaching' (nurturing; Table 2). In contrast, the lowest scores were for 'intending to challenge people to reconsider values' (social reform), 'expect people to be committed to changing society' (social reform) and 'expect people to master a lot of information' (transmission; Table 2).

**Influence Of Age On The Teaching Perspectives Of Australian PETE Students**

There were only one significant difference identified in the teaching perspective scores between age groups of first year PETE students. The transmission teaching perspective was significantly higher for 18 year olds in comparison to 20-25 year olds (mean difference= 3.07; p= .01; Figure 1).

Teaching perspective	Educational 'belief' items	Mean (/5)	SD	% respondents		
				Agree/ Strongly Agree	Neutral	Disagree/ Strongly Disagree
Apprenticeship	To be an effective teacher, one must be an effective practitioner	3.81	.60	72.8	26.2	1.0
	The best learning comes from working alongside good practitioners	3.80	.65	75.5	20.6	3.9
	Knowledge and application cannot be separated	3.22	.86	36.9	44.7	18.4
Developmental	Most of all, learning depends on what one already knows	2.57	.84	15.7	30.4	53.9
	Teaching should focus on developing qualitative changes in thinking	3.70	.64	66.0	31.1	2.9
	Teaching should build upon what people already know	3.30	.95	47.1	33.3	19.6
Nurturing	It's important that I acknowledge learners' emotional reactions	3.93	.62	81.2	16.8	2.0
	In my teaching, building self-confidence in learners is a priority	4.34	.71	91.3	7.8	1.0
	In learning, people's effort should be rewarded as much as achievement	4.21	.65	47.1	12.9	.0
Social Reform	My teaching should focus on societal change, not the individual	2.61	.76	11.8	42.2	46.1
	Individual learning without social change is not enough	3.27	.67	35.9	53.4	10.7
	For me, teaching is a moral act as much as intellectual activity	3.69	.67	59.2	39.8	1.0
Transmission	Learning is enhanced by having predetermined objectives	3.66	.69	66.4	28.8	4.8
	Teachers should be virtuoso performers of their subject matter	3.26	.65	36.7	52.0	11.2
	Effective teachers must first be experts in their own subject areas	3.38	.93	49.5	29.1	21.4

Table 1. Teaching belief items that linked to teaching perspectives within the TPI.

Teaching perspective	Educational 'intention' items	Mean (/5)	SD	% respondents		
				Usually/ Always	Sometimes	Rarely/Never
Apprenticeship	My intent is to demonstrate how to perform or work in real situations	4.15	.66	84.8	15.2	.0
	I expect people to know how to apply the subject matter in real settings	3.68	.74	58.6	39.4	2.0
	I want people to understand the realities of working in the real world	3.73	.90	64.6	27.3	8.1
Developmental	My intent is to help people develop more complex ways of reasoning	3.73	.83	62.6	30.3	7.1
	I expect people to develop new ways of reasoning about subject matter	3.57	.71	53.0	44.0	3.0
	I want people to see how complex and inter-related things really are	3.44	.90	46.0	42.0	12.0
Nurturing	My intent is to build people/s self-confidence and self-esteem as learners	4.71	.56	95.0	5.0	.0
	I expect people to enhance their self-esteem through my teaching	4.21	.80	83.0	14.0	3.0
	I want to provide a balance between caring and challenging as I teach	4.25	.76	85.0	13.0	2.0
Social Reform	My intent is to challenge people to seriously reconsider their values	2.77	1.07	22.4	38.8	38.8
	I expect people to be committed to changing our society	3.19	.90	33.3	46.5	20.2
	I want to make apparent what people take for granted about society	3.45	.99	45.0	55.0	15.0
Transmission	My intent is to prepare people for examinations	3.90	.98	68.0	23.0	9.0
	I expect people to master a lot of information related to the subject	3.21	.97	38.1	40.2	21.6
	I want people to score well on examinations as a result of my teaching	4.25	.88	79.0	17.0	4.0

Table 2. Teaching intention items linked to the teaching perspectives within the TPI.
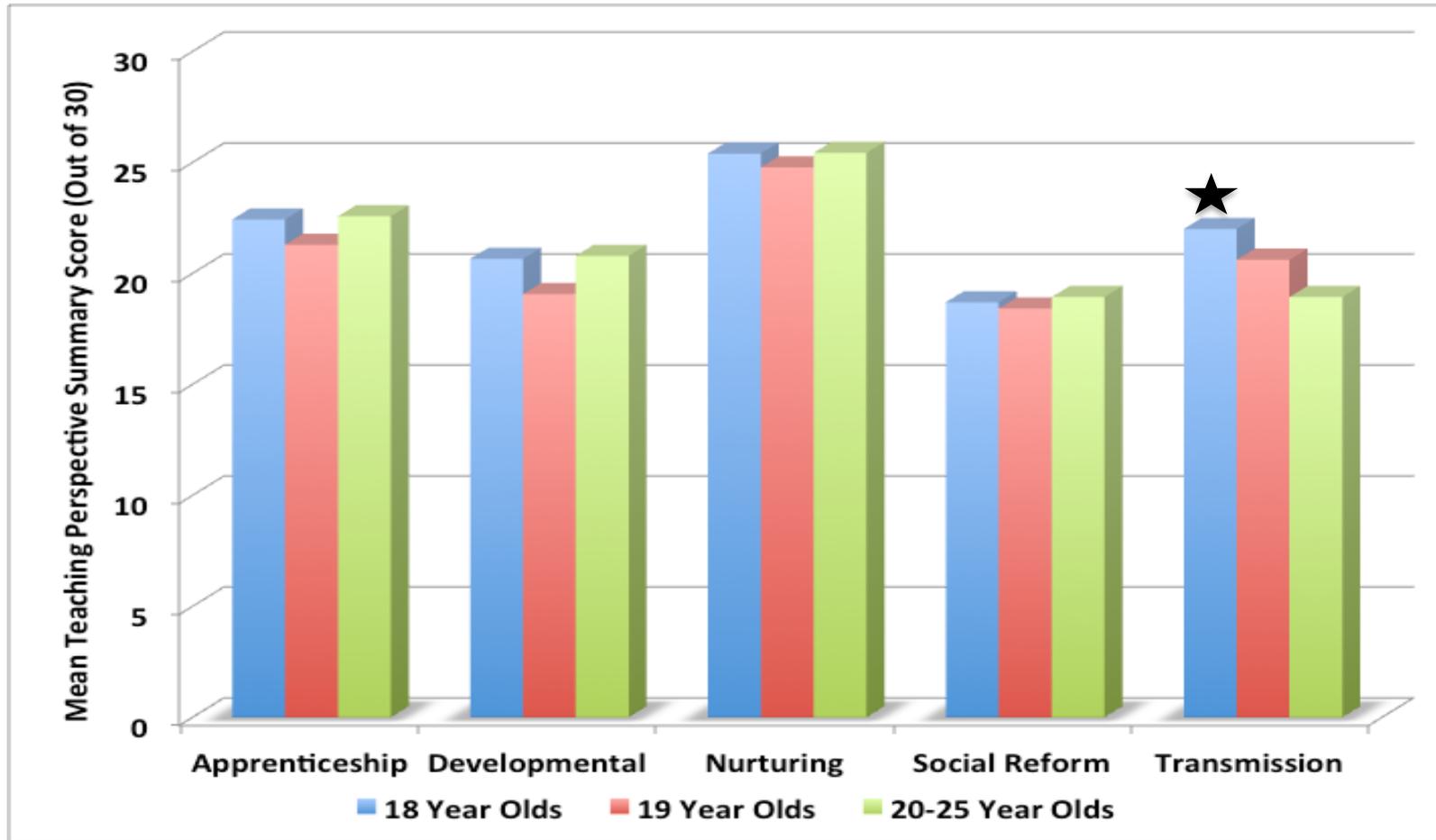
★ = significantly higher average teaching perspective score (p=< .05) for 18 year old PETE students in comparison to the 20-25 year old age group.

Figure 1. Age-specific teaching perspective scores of Australian first year PETE students.

Nurturing was the single, dominant teaching perspective for the highest proportion of PETE students across ages (18 year olds: 75%; 19 year olds: 77.6%; 20-25 year olds: 75%). Social reform was the single, recessive teaching perspective for the highest proportion of the PETE students for 18 year olds (62.5%) and 19 year olds (30.6%). In contrast, the transmission teaching perspective was identified as the single, recessive teaching perspective for the highest proportion of the 20-25 year old age group (42.9%).

Influence of Gender on the Teaching Perspectives of Australian First Year PETE Students

There were no significant differences identified in the teaching perspective scores between males and females ($p= >.05$), however it is evident that the Australian PETE students had a preference for the nurturing teaching perspective, followed in average score rankings by the apprenticeship, transmission, developmental and social reform teaching perspectives (Figure 2). Nurturing was the single, dominant teaching perspective for the highest proportion of the Australian PETE students across both genders (males: 69.2%; females: 76.2%). Social reform was the single, recessive teaching perspective for the highest proportion of PETE students for both genders (males: 44.0%; females: 43.4%).

Influence of Entry Characteristics on the Teaching Perspectives of Australian First Year PETE Students

There was only one significant difference identified in the teaching perspective scores between secondary school locations of first year PETE students. The transmission teaching perspective was significantly higher for pre-service teachers from rural areas in comparison to those from regional areas (mean difference= 2.55; $p= .02$; Figure 3). The transmission teaching perspective was significantly higher for pre-service teachers from rural areas in comparison to those from regional areas.

No significant teaching perspective differences were identified between first year PETE students for the type of secondary schooling (e.g. government, catholic, independent), socio-economic status (low, average or high SEIFA), tertiary entrance rank (40-60, 60-80, 80-100), family members that teach (yes/no) and second teaching methods (English, Health, Science, SOSE, Information Technology and Mathematics).

Overall predicted and actual dominant/recessive teaching perspectives of Australian first year PETE students

For the apprenticeship teaching perspective, 7.9% of the PETE students predicted this would be their dominant teaching perspective and 19.7% of PETE students predicted this would be the most recessive. The actual findings revealed that the apprenticeship teaching perspective was dominant for 5.8% of the PETE students and was recessive for 3.9%.

The developmental teaching perspective was predicted to be dominant by 39.5% of PETE students and most recessive for 3.9% of PETE students. The actual findings revealed that for 1.9% of the PETE students the developmental teaching perspective was dominant and for 14.6% the recessive teaching perspective.

The nurturing teaching perspective was predicted to be the most dominant perspective for 18.4% of PETE students and recessive for 7.9% of the PETE students. In contrast, the actual findings revealed that nurturing was the dominant teaching perspective for 74.8% of the PETE students. Nurturing was recessive for none of the PETE students.
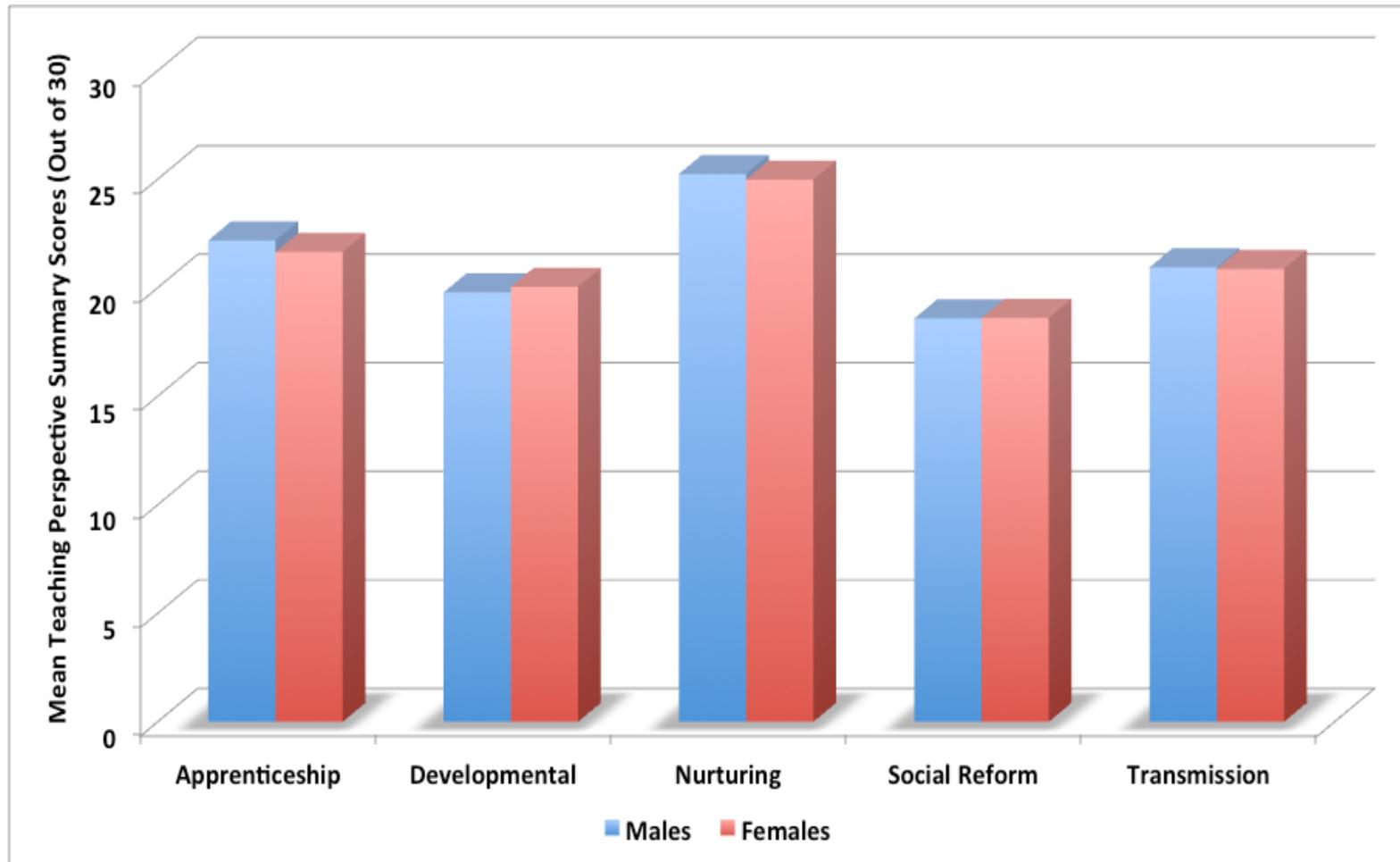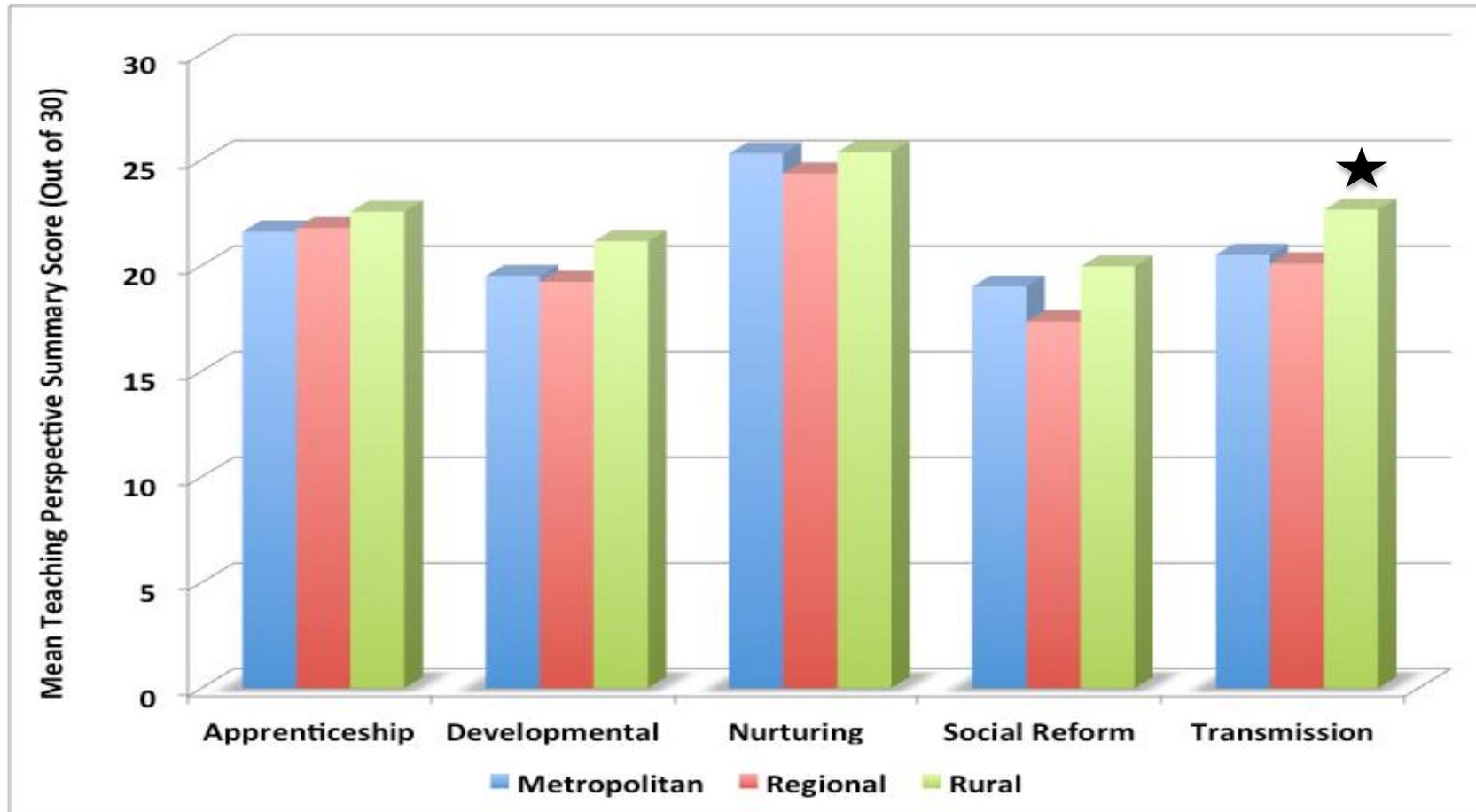
Figure 2. Gender-specific teaching perspective scores of Australian first year PETE students.

★ = significantly higher (p=< .05) average teaching perspective score for PETE students from rural secondary schools in comparison pre-service teachers from regional schools.

Figure 3. Previous secondary school location influences on the teaching perspective scores of Australian first year PETE students.

The social reform teaching perspective was predicted to be most dominant for 3.9% of PETE students and predicted to be recessive for 59.0% of the PETE students. Actual findings revealed that social reform wasn't a dominant teaching perspective for the PETE students, yet was recessive for 47.6% of PETE students.

The transmission teaching perspective was predicted to be the dominant perspective by 31.6% of PETE students and 7.6% of PETE students predicted that transmission would be their recessive teaching perspective. In comparison, the actual findings revealed that transmission was dominant for 4.9% of PETE students and recessive for 16.5% of PETE students. Additionally, 12.6% of PETE students possessed two or more dominant teaching perspectives and 17.5% of PETE students possessed two or more recessive teaching perspectives.

Perceived Importance of the Teaching Perspectives of Australian First Year PETE Students to Deliver Effective PE

When reporting on the importance of the apprenticeship teaching perspective for PE teaching, 14.3% believed that apprenticeship was most important, whereas 11.7% believed it was the least important perspective to deliver effective PE. For the developmental teaching perspective, 36.4% of the PETE students deemed this as the most important in comparison to 5.2% that reported this as the least important teaching perspective for teaching PE. A total of 13.0% of the Australian PETE students believed a nurturing teaching perspective was most important compared to 14.3% that reported nurturing as the least important teaching perspective to teaching PE.

When reporting on the importance of the social reform teaching perspective, 1.3% of the Australian PETE students believed social reform was most important and 58.4% of the PETE students believed social reform was least important to teach PE. For the transmission teaching perspective, 35% believed a transmission teaching perspective was important and 7.5% believed it was least important for PE teaching. There were no significant differences in the predicted dominant/recessive or importance of teaching perspectives across each of the demographic influences (program entry/background characteristics of the participants).

Discussion

Research has reported a distinct need to investigate the teaching perspectives of PETE students (Curtner-Smith, 1997; Hopper & Sandford, 2006). The present FIT-PE study provides a unique contribution to the international literature by providing insight into the influences on teaching perspectives of first year PETE students at the 'entry point' of their teacher training. Investigating the early teaching perspectives of Australian PETE students has the potential to guide the content of teacher education programs to develop specific or broaden teaching perspectives. The findings from the FIT-PE study revealed that 18 year olds (compared to 20-25 year olds) and PETE students from rural backgrounds (compared to regional) had a significantly higher average summary score for the transmission teaching perspective. Although the PETE students predicted the developmental teaching perspective to be the most dominant and important for physical education teaching, the nurturing teaching perspective was revealed to be dominant for 74.8% of the Australian PETE students. The FIT-PE study findings reveal that pre-service physical education teachers can be unaware of their dominant teaching perspectives and can possess a dominant teaching perspective that contrasts what they predicted or perceived to be important. The FIT-PE study uniquely

provides reflective opportunities for PETE programs of the underlying core teaching values (beliefs and intentions) of students at the beginning of physical education training.

Research has previously recognised that PETE students enter teacher training with a 'surface approach to learning' to meet the minimum program requirements (Entwistle and Tait 1990; Gow & Kember, 1990; Marton & Saljo, 1997; Pill et al., 2012). Beginning teachers can have a focus on the reproduction of content learnt, rather than for analyses, integration and applying the content based upon a school mentor's approach (Capel, 2007). Such a focus on content is reflected in the present FIT-PE study with 31.6% and 35% of Australian pre-service PE teachers predicting that the transmission teaching perspective would be most dominant and is most important for PE teaching, respectively. The transmission teaching perspective can be described as perceiving students as a container that needs to be filled with knowledge via powerpoint presentations, examinations and instructions (Pratt et al., 2001). Yet content-focused teaching values can lead to a reduced capacity to reflect on teaching by limiting to lessons, tests and units of work, rather than on a range of teaching interactions. It is suggested that teachers must understand methods to provide engaging experiences for all young people in PE (Tinning, 2007). In learning to teach, beginning PE teachers (and mentors) have been known to prioritise content knowledge (Capel, 2007). With 18 year olds having significantly higher average summary scores for the transmission teaching perspective compared to 20-25 year olds, the findings from this paper offers support for the assumption that younger beginning teachers can be more concerned with the content (transmission) associated with teaching (Siedentop, 1994; Mawer, 2014). The lower (compared to the 18 year old) transmission teaching perspective score of the older aged beginning teachers might demonstrate some form of 'wash-out' of the apprenticeship of observation from school PE experiences and exposure to other teaching perspectives.

It is unclear why the PETE students from rural backgrounds had significantly higher average summary scores for the transmission teaching perspective compared to those from regional areas and further research is required. The results could indicate that beginning teachers originating from a rural setting had earlier schooling experiences (apprenticeship of observation) based around more transmission teaching values. Perhaps less access to resources in rural/remote communities (Bini, Price & McDonald, 2010) could influence core values towards having more traditional content-oriented teaching beliefs and intentions (e.g. set texts/theory). A potential concern with higher scores for the transmission teaching perspective (20-25 year olds and rural students) is that PETE students entering a teacher training program that harnesses and transmits similar values will be less likely to adapt student behaviours and teaching practices (Capel, 2007; Pill & Brown, 2007). Rather than being a transformative agent by enhancing PE teaching and learning practices, the PETE students could prioritise fitting into an existing context by conforming to the values being taught (Stroot & Ko, 2006). It has been reported that PE teachers have been slow to reduce the dominant use of teacher-centred and directive practices typical of the command and practice style of the historical 'physical education method' (Metzler, 2011). Such a slow transition from teacher-centred practices can be attributed to an absence of 'teaching perspectives' (Alexander et al., 1993) and the "musculature of a focussed teaching-learning pedagogy" (Alexander & Penney, p289, 2005). The finding in this study that PETE students enter teacher education with a strong transmission teaching perspective highlights the need for PETE courses to be disruptive contexts in the quest for change from reproduction and transmission teaching models in PE.

Despite the developmental and transmission teaching perspectives being predicted as the most dominant and important teaching perspective for PE teaching, the nurturing teaching perspective was revealed to be dominant teaching perspective for 74.8% of the Australian PETE students in this study. Similar to previous studies (Collins & Pratt, 2010), the nurturing

teaching perspective generated the highest average scores for the first year PETE students (including across age groups and gender). The nurturing teaching perspective is based upon the assumption that for teaching to be effective "it must be planned and conducted from the learner's point of view" (Pratt et al., p3, 2001). This finding is also reflected by the notion that "aspiring teachers with a nurturing perspective are more likely to be preparing to teach physical education" (Collins et al., p5, 2003). Schools are a major influence on establishing early teaching beliefs prior to entering teacher education programs (Pill et al., 2012) however, it has been revealed that high nurturing teaching perspectives can occur from high proportions of female participants (Collins & Pratt, 2010). Within the present study teaching perspective scores were relatively even across both genders. There has been concerns regarding the attitudes towards physical activity participation of females throughout primary (Ridgers et al., 2012) and secondary school education (Smyth, Mooney & Casey, 2014). Nurturing components of trust, care and identifying student needs are important to facilitate learning in the classroom, yet approaching all teaching situations from the nurturing teaching perspective may need to be cautioned (Clarke et al., 2005). Teachers often display higher nurturing teaching perspective scores than other professions such as dieticians and health practitioners (Pratt, Collins & Jarvis-Selinger, 2001) and it is possible those with dominant nurturing teaching perspectives are more likely to be attracted to a career in teaching. Further investigation should be undertaken to determine why PETE students tend to possess higher nurturing teaching perspective scores. As the nurturing teaching perspective wasn't predicted to be the most dominant or important teaching perspective, it could indicate PETE students could be unaware of their underlying 'core nurturing values' of building self-confidence in learners, rewarding learning efforts and acknowledging learners.' Further investigation of the prevalence of such underlying nurturing values within PE teaching practices and discussion of the suitability of instilling nurturing values within PETE programs is therefore warranted.

In contrast to nurturing, social reform generated the lowest average summary scores for the Australian PETE students. Previous research has noted the unpopularity of social reform as a teaching perspective (Collins et al., 2003). Such low teaching perspective scores for the first year PETE students might be related to a desire to learn and develop foundation teaching skills prior to attempts to influence the social components within a classroom (Collins et al., 2003). Future investigation could be undertaken into the use of social reform as a teaching perspective and why social reform scores are typically lower in PETE students. As teacher education programs have been shown to provoke shifts in knowledge and pedagogical awareness of pre-service teachers (Pill et al., 2012; Hyndman, 2014), discussion is required into whether PETE students should have an increased exposure of social reform approaches in their teacher education. A socio-critical construction of the teacher is required for PE to emerge from the 'crisis discourse' and curriculum critique that has gathered momentum since the early 1980's (Cliff, Wright & Clarke, 2009). The crisis discourse has resulted from a PE reform agenda from behaviourist orientations (e.g. transmission and directive teaching) towards constructivist PE teaching (e.g. critical inquiry and problem solving) (Cliff, Wright & Clarke, 2009). Capel (2007) reports that in order to meet the needs of young people today there needs to be PE teachers who can challenge and change the teaching of the subject. Critical reflection of teaching values can ensure social values can be challenged and shaped (Capel, 2007; Pill & Brown, 2007). The social reform teaching perspective was predicted and resulted in being the least dominant and least important teaching perspective, therefore investigation of social reform values within PETE students and more experienced in-service PE teachers is recommended.

Within the current FIT-PE study, just 14.3% of the Australian PETE students perceived the apprenticeship teaching perspective to be important for teaching PE. Despite a continuing focus of providing school-based experiences within teacher education programs

(e.g. pre-service teacher placements) (Kolb, 2014), the lower average summary scores for the apprenticeship teaching perspective and low level of dominance (for 7.9% of PETE students) is an unexpected finding. It has been reported that few experiences in life can have such a significant impact on personal and professional lives than the mentorship of beginning teachers (Gold, 1996; Pill et al., 2012). It is possible that due to one third of the first year PETE students having immediate family members as practicing teachers, the students may have already experienced a certain level of teaching mentorship, resulting in less dominant apprenticeship values. Research has reported that school mentors can have a greater impact on pre-service development than university tutors. This has reinforced the notion of the practice of 'doing' being more important than theorising (Capel, 2007). Mentors are reported to have a significant role in the socialisation of beginning teachers and how beliefs and intentions are moulded in comparison to university-based tutorage (Behets & Vergauwen, 2006; Pill et al., 2012). Although university-based tutoring classes and programs have a key role in optimising PETE students' development, school-based mentoring within real world settings is a requirement for course accreditation with Australian teacher registration authorities. The school-based cultures in which PETE students enter can have a large influence on teaching approaches due to the level of support that is offered (Hastie et al. 2005; Pill et al., 2012). The influence of teaching mentors on PETE students' beliefs and intentions can play a key factor in broadening value orientations (Gillespie, 2011). As content, scaffolding learning and providing student support are often prioritised within PETE students (Capel, 2007), the values of receiving mentoring and undertaking mentorship could have been over-looked by the beginning teachers.

Although there are no right or wrong teaching perspectives for teaching (Collins & Pratt, 2010), the results within the FIT-PE study revealed 39.5% and 36.4% of the PETE students perceived the developmental teaching perspective would be most dominant and important for teaching PE, respectively. The developmental teaching perspective is associated with developing thinking skills to negotiate complex tasks and reasoning (Collins & Pratt, 2010). Within Australian PE and sport, understanding the skills to negotiate the complex tactical and technical game situations (e.g. striking, net/wall, target, invasion games) has been promoted via the Game Sense pedagogical approach to learning since the mid-1990's (Pill, 2011; Light, 2013). Game Sense approaches to PE teaching have emerged as a popular and important approach for PE delivery in recent decades (Pill, 2011). Such background exposure to constructivist aligned games and sport via Australian Game Sense approaches to PE could have had an impact on the high proportion of PETE students perceiving the developmental teaching perspective as most important for PE teaching. With an historical emphasis on simply developing physical skills and knowledge within the PE teaching profession (Capel, 2007; Kirk, 2010), the perceived values of scaffolding and guiding students through complex levels of tasks were predicted to be most dominant and important by the PETE students. The PETE students' beliefs and intentions to provide emotional support during teaching reinforce the potential difference between underlying core teaching values (nurturing) and what early career teachers often prioritise (development/transmission principles) (Capel, 2007). Reflecting on the more dominant core nurturing values of building self-confidence, rewarding efforts and acknowledging emotions could further improve understanding of PETE processes and practices.

Strengths of the FIT-PE study include the use of a reliable and valid self-report instrument to measure the teaching perspectives of the first year PETE students and the number of background demographic characteristics measured (e.g. tertiary entrance rank, location of secondary schooling). The study was also undertaken in one of the largest undergraduate PE programs in Australia. Yet due to the moderate sample size and cross-sectional design at a single university, generalising of findings should be done so with

caution. As the study was of a quantitative nature, it is possible qualitative data may also have elicited further richness to the self-reported teaching perspective responses. Yet obtaining data from over 100 PETE students necessitates the utilisation of self-reported data. The questionnaire (including TPI) was administered to the Australian PETE students prior to PE and health education disciplines merging within the national curriculum, therefore it is possible that the predicted importance of teaching perspectives self-reported by the pre-service teachers could differ in settings where the subject disciplines are combined. With informal physical education facilitation (e.g. during school break periods) emerging as a strong consideration for PETE programs (Hyndman, Benson & Telford, 2014; Hyndman & Chancellor, 2015), further questionnaire items could also have been considered to gauge PETE students' teaching values towards facilitating learning beyond structured classes.

Implications for Teacher Education

The present FIT-PE study provides valuable information that can be used to inform the teaching content administered by teacher education and school mentoring programs. Previous research has recognised that PETE students believe that their knowledge should differ and evolve from what they have previously experienced (Pill et al., 2012). Findings presented in this paper can promote discussion into whether the development of the five teaching perspectives should be addressed or developed evenly within PE teacher education programs (Collins et al., 2003), strategies to develop teaching perspectives and can lead to the development of more reflective practitioners. The current research reinforces Pill and Brown's (2007) suggestions for PETE programs to be deliberately disruptive in order to be transformative of hegemonic assumptions of PE as largely reproductive transmission values. Additionally, teacher education programs could use the findings of this paper (e.g. dominant nurturing core values) to ensure the nurturing teaching perspective is addressed in future advertising campaigns. Reproducing the FIT-PE study in other PETE settings to gauge which perspectives are perceived as important for PE teaching may also prove valuable reflective opportunities. PETE students and other pre-service teachers must be continually provided with opportunities for reflective moments before becoming established in what is often a pedagogically conservative practice of school PE teaching (Capel, 2007; Pill & Brown, 2007).

Conclusions

The FIT-PE study findings reveal that 18 year olds (compared to 20-25 year olds) and PETE students from rural backgrounds (compared to regional) had a significantly higher average summary score for the transmission teaching perspective. Despite the developmental teaching perspective predicted to be the most dominant and important teaching perspective for PE teaching, the nurturing teaching perspective was revealed to be the dominant teaching perspective for the Australian PETE students. The FIT-PE study results demonstrate that pre-service PE teachers can be unaware of their dominant teaching perspectives and can possess a dominant teaching perspective that contrasts what is predicted or perceived to be important. Teacher education programs can contemplate pre-service PE teachers' perspectives at the 'starting blocks' of teaching in order to transform and develop broader teaching perspectives in readiness for future PE careers. The paper also provides reflective opportunities for teacher training programs and PETE students of the underlying core teaching values (beliefs and intentions) at the entry point of PE training.

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