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## **Preservice Generalist Teachers Enlightened Approach to Teaching Physical Education Through Teacher Biography**

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*Abstract: This paper describes a new learning experience, which was introduced following an examination of the literature regarding preservice primary school teachers' (PPST) notions of their past experience in Physical Education (PE) (Elliott 2013). PPSTs were given the opportunity to recognise, reflect, interrogate and reframe a critical incident from their schooling in PE or Sport. This exercise was designed to enlighten students about their own schooling and the potential impact this event may have on pre-conceived ideas and opinions about teaching PE. Students (N=214) enrolled in off and on campus mode, of a preservice teacher education program in a university located in regional NSW, were asked to provide information about, and to analyse, an incident, either positive or negative that occurred in PE or Sport during their primary or secondary school years. In addition, students were encouraged to reframe the incident and to seek out alternative actions that could have influenced the outcome. The aim was to encourage reflection about how preconceived notions pertaining to PE might be dealt within their present position as a preservice teacher. The PPSTs scripts were analysed using the Leximancer text mining software (Smith, 2000). Findings from the analysis provided themes and concepts, which suggest a similarity for both, off and on campus, males and females. However, there are some subtle differences between the cohorts that may be due to age or experience.*

### **Background**

There is a plethora of research surrounding teacher biographies and Physical Education (PE), including the work of Allison, Pissanos and Sakola (1990) Curtner-Smith (2006); Goodwin (2010); Valtonen, Hirvensalo, Reunamo, & Ruismäki (2014); Morgan and Hansen (2008); Webster, Monsma and Erwin (2010), to name but a few. These studies focus on teacher socialisation, background experiences and memories of the practical aspects of PE in the school context. In addition, the findings from these studies include and recommend that without an interrogation of past school-based PE experiences there may be a diminished effect of preservice teacher education. Interestingly, it has been suggested that males tend to have more pleasurable school-based PE experiences than their female counterparts (Azzarito, Solmon, & Harrison, 2006; Enright & O'Sullivan, 2010; Flintoff & Scraton, 2001; Garrett, 2004; Keay,

2007; Wright, 1996) and that some preservice teachers' understandings of PE are generated in school-based PE (Garrett & Wrench, 2012). Therefore, these experiences may influence their gendered teacher biographies differently. Callcott, Miller and Wilson-Gahan (2015) recommend an activity to recognise, reflect, interrogate and reframe a school-based PE or sport event as a necessary exercise to improve teacher quality. However, little research has been conducted on the effects of changing preservice teaching practice utilising this approach.

This paper reflects on a new experience undertaken during preservice primary school teachers' (PPST) preparation to teach primary school PE. Generally, primary school teachers (PST) teach pupils from kindergarten (approximately 5 years of age) to year 6 (approximately 12 years of age). The intention of this research paper is to report on possible changes in PPST students current thinking and attitude towards teaching the movement aspects of PE, that arose from raising awareness of PPST about their own experiences in practical PE or sport lessons, during their pre university schooling years.

When individuals enter university with the intention of becoming PST, they bring with them particular ideas and impressions about what it means to be a teacher (Allison et al., 1990; Dinan-Thompson, 2009; Wrench & Garrett, 2012). Humphries and Ashy (2006) have implied that these preconceived ideas and perceptions are indelibly imprinted on their memories. Furthermore, their ideas and perceptions may encompass what it means to teach a specific subject such as PE (Ní Chróinín & Coulter, 2012).

Teaching movement skills in practical PE classes involves a pedagogical approach that is markedly different from those used to teach other subjects, largely due to the content and the context in which PE is taught. In particular the way PE is taught in schools, usually means that pupils are 'on display' (Webb, McCaughtry, & Macdonald, 2004), thus their performances and relative levels of physical skill are exposed to their classmates and, sometimes, to a wider audience. Negative experiences and perceptions of the practical components in PE can result as a consequence of numerous factors, for example, having low levels of development in a range of motor skills. Dyson (2006) indicated that many students who were involved in PE classes at school felt they were placed in situations in which they became apprehensive about participating fully. Combined with the fact that PE is often taught as a sport-based event (Kirk, 2006; Light, 2008), this factor may lead to a situation wherein some individuals become singled out for undue negative attention (Tischler & McCaughtry, 2011; van Daalen, 2005), resulting in feelings of embarrassment and self consciousness (Pill, 2010). Given the nature of the school classroom situation during PE classes it is probable that prior experiences and ingrained beliefs influence individuals' decisions, practices, and performance as future teachers of PE (Morgan, Bourke, & Thompson, 2001).

Many individuals experience positive encounters in PE during their school years while others have mixed feelings in response to the subject (Petrie, 2008). Consequently, upon entering tertiary teacher education programs, PPST may retain some diverse, polarised and/or indifferent attitudes toward PE and this may translate to their attitude regarding teaching this content area. However, there is scope for changing this situation, as according to Pickup (2012) the greatest potential for improving primary PE rests with PPST who have mixed feelings about PE. Furthermore, Pickup (2012), claims that students who have mixed feelings may hold the key to long-term improvements in the subject as a whole.

In response to the assumption that individuals arrive at university with predetermined ideas about the practices and programs of school based PE, the authors of this paper, all of whom are involved in teaching PE to PPST, implemented a new learning experience within the program. The change was designed to give the future teachers the opportunity to recognise, reflect upon, interrogate and reframe their prior experiences and therefore, preconceptions of PE. This activity was aimed at assisting PPST to move towards developing an understanding of how these perceptions may be reworked and viewed from a more enlightened teacher-oriented perspective (Petrie, 2008).

## The Theory

The theory of social learning championed by Bandura (1997) indicated that past experiences significantly influence individuals' efficacy and expectations of teaching and teaching behaviours. Bandura also claimed that efficacy beliefs might be strengthened through confronting challenging situations and achieving some measure of accomplishment. Bandura (1986) recognised four sources that support efficacy growth. These are, mastery experience, vicarious experience, social persuasion, and physiological state. More recent literature, in support of Bandura (1997), suggested that student teachers' efficacy beliefs can be changed as a function of context (Gao, Xiang, Chen, & McBride, 2013). Examples of such a context can include, cooperating teachers, university supervisors, administrators, time constraints, the availability of equipment and supplies, and curricular concerns, amongst others. To this end, Johnson (2010) indicated that it is important to examine the connective roles played by teacher educators and significant others, within their professional spheres (e.g., cooperating teachers) in fostering PST's efficacy beliefs.

According to Zach, Harari and Harari (2012), PST's efficacy beliefs have not been widely considered. However, these authors also reported that a study by Gurvitch and Metzler (2009) found that practicum experience and teacher education programs also have an important effect on establishing PST efficacy beliefs.

Bandura's (1997) notion of past experiences, coupled with other researcher findings (Ashy & Humphries, 2000; Freak, 2011; Gao et al., 2013; Kagan, 1992; Xiang, Lowy, & McBride, 2002), indicate that the prioritisation of learning approaches, which value future teachers experiences is essential to increase their knowledge about teaching PE, to change attitudes and to increase awareness of PE as a content area. These research findings and attendant literature, led the authors to link theory to PPST classroom practices with the aim to raise students' awareness of the effects of their own previous PE experiences on their thinking about teaching the subject. It was the overall aim of this paper to report the findings of the student experience in recognising, reflecting, interrogating and reframing a critical incident from their schooling in PE.

Following the introduction of teacher biography as an early learning activity in a PE curriculum unit, in a preservice teacher education program, and noting that a unit in this context is referred to as being a trimester of named content or subject matter, the two research questions were:

*What were the group trends (female/male: off/on mode of learning) for recalling an incident in school-based PE or Sport?*

*What were the group trends in the response to reframing the incident under the question "What were other alternative actions that could have been undertaken...?"*

## Design

This study was conducted at a university located in a rural city in NSW, Australia. The participants were all enrolled in a preservice teacher education degree for generalist PST, which prepares them to teach all six key learning areas as defined by the State Department of Education.

## Participants

Both *off* and *on* campus PPST ( $N=214$ ) participated in the study. Off campus students study online for most of their degree, and attended a mandatory three day intensive school to learn to teach the three practical components of gymnastics, games and dance, as outlined in the current NSW Personal Development Health and Physical Education (PDHPE) K-6 Syllabus. While in the Australian Health and Physical Education (AHPE) curriculum, the gymnastics component is present in a subtle way under the curriculum strand of movement and physical activity, the NSW Board of Studies (1999) currently mandates that gymnastics needs to be taught by the generalist PST. Off campus students undertake a Health Education and a separate PE unit during the final year of their degree, in line with university guidelines. Generally, on campus students follow a similar structure of lesson content to off campus students and they attend lectures and PE practical sessions. They usually undertake the Health and PE units in the second year of their four-year degree.

For the cohort involved in the study, the average age of the on-campus students was 20 years, whilst the off campus students were an average of 32 years of age. The percentage of female participants (78%) to male participants (22%) reflects what can usually be found in preservice primary teaching programs and in the sex composition of primary school teachers in general in New South Wales.

## Intervention

Both off and on campus students were required to undertake a reflective analysis of a school based PE incident or situation that occurred during a practical lesson in their prior schooling. This reflective analysis was based on an interactive lecture where the main author led the students by introducing the current literature surrounding the formation of attitudes towards or against a key learning area based on prior personal experiences. This information was recorded and made available for the off campus students to engage with, which was also augmented by discussion forums on the learning management system (LMS), for example 'Moodle', facilitated by the lecturers.

## *Incident Reflection*

The written exposé and analysis of an incident, either positive or negative that occurred during their primary or secondary school years in a practical PE class was based on the work of Francis (1997). According to Francis (1997) incident analysis and reflective practice in PST may encourage individuals to question the foci of the incident,

thus leading to a better understanding of pertinent factors that arose before, during and after the incident.

There were five components to the essay style question - a description of the incident, identification of who may have been advantaged or disadvantaged, the alternatives for action, possible meanings ascribed to the event by others and taken for granted assumptions. This paper presents details of two aspects of the questions. The first involved an examination of the incident to gauge the positivity compared with the negativity of the event and the second examined the alternatives for action.

To determine the effectiveness of this learning experience, following ethical approval from the university, the PPST were invited, retrospectively via email, to allow access to their written responses and comments about their PE experiences whilst at school. The data were gleaned from the university's LMS. The purpose of the analysis was to determine whether there were any changes to the ways in which the PPST would approach a similar situation, and whether there were differences between sub groups, such as off and on campus students and between male and female participants within the whole cohort.

The transcript data were divided into five categories: (i) all participants' texts, (ii) off campus female students' texts, (iii) on campus female students' texts, (iv) off campus male students' texts, and (v) on campus male students' texts. This division into categories was undertaken to allow for a more fine-grained analysis of the data and to detect any group trends based on sex and enrolment patterns.

### *The Data Analysis*

The texts were analysed using Leximancer 2.25 (Smith, 2000). This software has been described by Smith and Humphrey (2006, p.262) as "a method for transforming lexical co-occurrence information from natural language into semantic patterns in an unsupervised manner ... the software uses algorithms which are statistical, but employ nonlinear dynamics and machine learning." As such, according to Smith (2003), Leximancer is capable of analysing large amounts of text, which may be modified as researcher driven requirements are changed. Furthermore, the software-based analysis generates clearly defined concepts and themes (Smith, 2000). The themes that emerge from the Leximancer software are identified within a 'concept list' and presented in hierarchical order from most associated to least associated. The strength of the themes can be determined using the 'absolute count' tool, which refers to the number of times concepts are found in the text.

The data analyses from Leximancer are presented in map format with a single word within the coloured circles showing the themes. The concept-words are clustered within a circle outline, and are shown as dots as well as in small print. The concepts are distinguished by single parenthesis within the general text. The brightness of the concept is related to its frequency, and their nearness in the map indicates the concepts that appear in similar contexts. The number of themes and concepts can be manipulated to provide a lens to zoom in or out to focus on relevant areas of interest. Ranked concepts can be cross-referenced against other concepts, and the text pertaining to each cross-referenced category can then be closely examined.

## Results

This section outlines the results of the data analysis. First a holistic approach to the teacher biography incident was analysed based on the data from Leximancer generated themes, followed by finer grained analysis per group of sex and enrolment pattern. Second the alternatives for action were analysed, using the same process and methodology.

### Leximancer Results

An initial examination of the data was undertaken using all scripts ( $N=214$ ), addressing all five questions in their entirety. To recap, the five questions are listed in the previously presented sub-section entitled 'Incident reflection'. The for analysis of all questions, the emergent map was set at 60% for theme size and 50% for concepts, which is the setting for all Leximancer maps in this paper. This process narrowed the number of themes and concepts to the four or five most highly ranked and provided a consistent lens on the emergent themes and concepts for comparison purposes.

#### *All Preservice Primary School Teachers (PPST)*

The following ranked concepts were identified. The 'cut off' point showing the top five concepts was set at a ranked concept of 27.1%. Shown in Figure 1 are the concepts and accompanying themes. The top five concepts were:

- 'students' (absolute count = 2281, ranked concept = 100%)
- 'teacher' (absolute count = 2184, ranked concept = 95.7%)
- 'school' (absolute count = 732, ranked concept = 32%)
- 'experience' (absolute count = 627, ranked concept = 27.4%)
- 'team' (absolute count = 619, ranked concept= 27.1%)

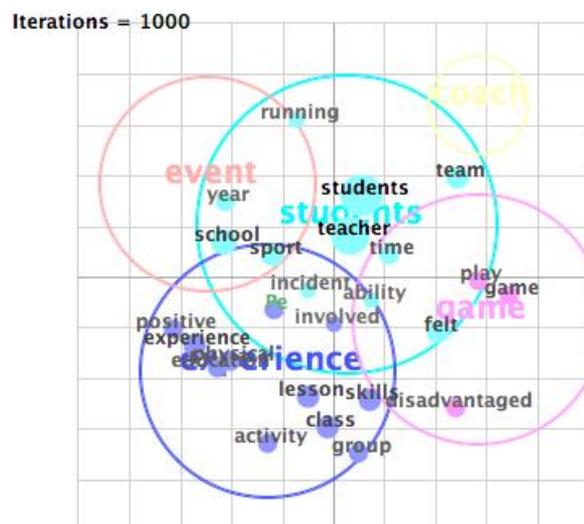


Figure 1: Leximancer map showing themes (circles) and concepts (dots) for all PPST responses (N=214)

The map shown in Figure 1, derived from the all student responses, shows 'students' as the brightest circle. Concepts that appear in closest proximity are 'students', 'teacher', 'school', 'experience' and 'team'. These five concepts travel together throughout the text, i.e., co-occur in similar contextual contexts in the data set. There are some other concepts relevant to this study that were included in the analysis. These concepts are referred to in the following section.

### *Cross-Referenced Concepts*

Relevant concepts were examined using the Leximancer text browser. This facility extracts references with relevant surrounding text associated with two selected concepts. For all the PPST the two most frequent concepts, namely, 'students' and 'teachers', were manually cross-referenced against concepts relevant to the research questions. The word 'students' was cross-referenced against 'feel' (feelings or felt), and 'teachers' cross-referenced against 'experience.'

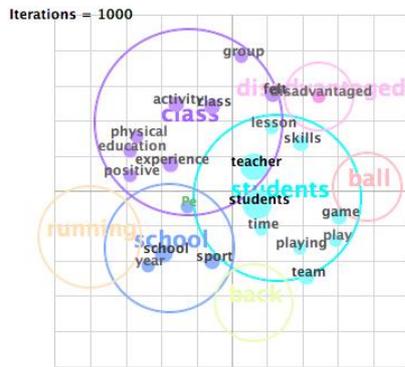
The extracted text for the concepts 'students' and 'feel' were analysed with regard to the PPST PE experiences whilst at school. This process involved examining the text and allocating a particular group of words clustered around the concept to one of four groupings. The four groupings were: negative feelings ( $n=150$ ); positive feelings ( $n=144$ ); feelings that were associated with other persons including teachers, parents and other individuals that did not reflect on the PPST feelings about the issue ( $n=96$ ); and, feelings about how the incident may affect future teaching ( $n=11$ ). The two important concepts, specifically 'students' and 'teachers', showed that the negatively reported comments (words shown in italics) involved the words of *embarrassment* ( $n=70$ ), *humiliation* ( $n=39$ ), *intimidated* ( $n=13$ ), and *scared* ( $n=12$ ). The positive feelings were expressed in the words, *positive* ( $n=80$ ), *comfortable* ( $n=68$ ), *support(ed)* ( $n=41$ ), and *succeeded* ( $n=29$ ).

Given this information, it appears that negative and positive feelings towards school-based PE were close to being expressed equally. There was a 1% difference between the two concepts (51% to 49% respectively). The extracted text for the concepts 'teachers' and 'experienced' were also analysed. The four groups of experiences were the same as for the previous two concept cross-references, namely, negative experiences ( $n=62$ ); positive experiences ( $n=67$ ); experiences that were associated with other persons including teachers, parents and other individuals who did not reflect on the PPST feelings about the issue ( $n=120$ ); and, experiences that would have influenced how they taught PE in the future ( $n=121$ ). Analysis of the concepts 'teachers' and 'experienced' showed that the negatively reported text references included experiences that were either *negative* ( $n=134$ ) or *humiliation* ( $n=39$ ) or *embarrassment* ( $n=26$ ). The positive feelings were expressed in the words, *positive* ( $n=286$ ), and *comfortable* ( $n=13$ ).

The most salient feature of this latter analysis was the textual reference for the responses ( $n=121$ ) regarding how this reflective exercise gave rise to an awareness pertaining to the potential influence of past practices/incidents on future practice, and how reconsideration would be given to future practice based on individual's reflection on the incident(s).

*Off/On Campus and Sex Comparisons*

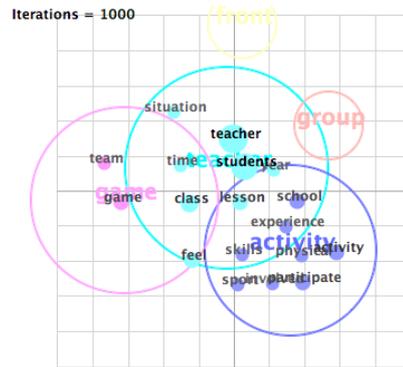
Figures 2 to 5 show the breakdown for off and on campus, female and male PPST after data were subjected to Leximancer analysis. The maps show the themes (circles) and concepts (dots and small print), which may be compared visually. In addition the information shown under each map provides a list of the top five ranked concepts.



Main concepts off campus female students  
(n = 127)

- 'students' (absolute count = 1362, ranked concept = 100%)
- 'teacher' (absolute count = 1361, ranked concept = 99.9%)
- 'school' (absolute count = 479, ranked concept = 35.1)
- 'team' (absolute count = 420, ranked concept = 30.8%)
- 'sport' (absolute count = 377, ranked concept = 27.6%)

**Figure 2: Off campus female students**



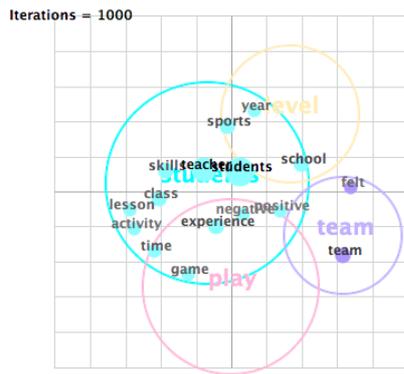
Main concepts on campus female students  
(n = 52)

- 'teacher' (absolute count = 522, ranked concept = 100%)
- 'students' (absolute count = 500, ranked concept = 95.7%)
- 'class' (absolute count = 197, ranked concept = 34.2%)
- 'lesson' (absolute count = 179, ranked concept = 29.1)
- 'feel' (absolute count = 377, ranked concept = 25.6%)

**Figure 3: On campus female students**

The ranking of the concepts with off campus female PPST compared to on campus female PPST showed that the top two concepts were the same, but presented in reverse order. The third concept of 'School' (off campus female students) and 'Class' (on campus female students) had some alignment, however, the remaining two concepts were dissimilar ('Team/Lesson' and 'Sport/Feel'). One could speculate that the difference could be related to the age and lived experiences (Goodwin, 2010, p. 19) of the different cohorts, however, there was insufficient data to accurately determine the reasons for the differences in this paper.

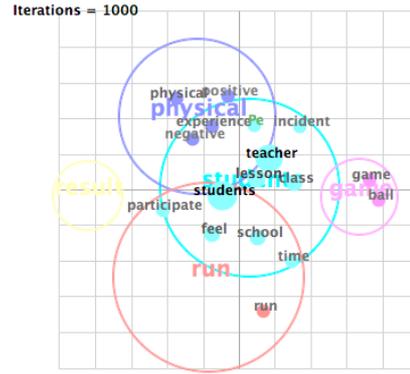
The following concept maps, Figures 4 and 5 indicate the concepts and themes for male students in the off campus mode of study and compared to male students in the on campus mode of study.



Main concepts off campus male students  
(n = 17)

- 'students' (absolute count = 198, ranked concept = 100%)
- 'teacher' (absolute count = 151, ranked concept = 76.2%)
- 'team' (absolute count = 80, ranked concept = 40.4%)
- 'school' (absolute count = 61, ranked concept = 30.8)
- 'experience' (absolute count = 55, ranked concept = 27.7%)

**Figure 4: Off campus male students**



Main concepts on campus male students  
(n = 20)

- 'students' (absolute count = 158, ranked concept = 100%)
- 'teacher' (absolute count = 133, ranked concept = 84.1%)
- 'lesson' (absolute count = 57, ranked concept = 36%)
- 'feel' (absolute count = 38, ranked concept = 24%)
- 'class' (absolute count = 38, ranked concept = 22.1%)

**Figure 5: On campus male students**

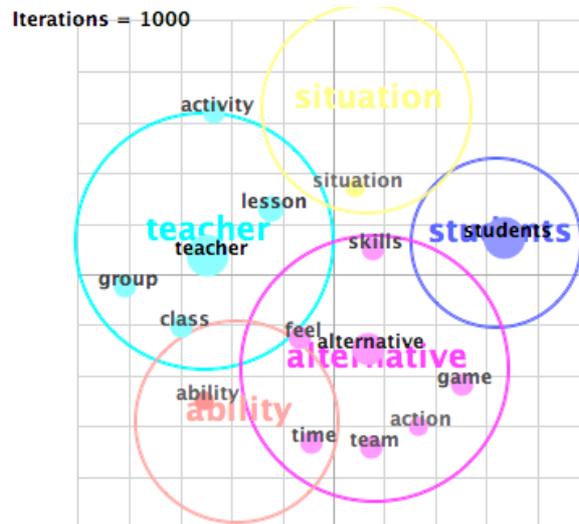
For off and on campus male PPST, the top two concept rankings appear in the same order. However, as is shown in the tables accompanying Figures 4 and 5, the remaining concepts were dissimilar (Team/Lesson; School/Feel; Experience/Class). Overall, following an examination of Figures 2 to 5 and the accompanying concepts and themes, the salient points noted were that for the off campus PPST, results were similar with four of the five concepts present for both male and female participants. Also notable were the ranked concepts for both male and female on campus PPST. These were also very similar, the only difference being the order of the concepts. There was also a difference in concepts between off and on campus cohorts for both sexes in three of the five top ranked concepts.

The term 'school' appears within the five listed concepts only for the off campus cohort. This finding may indicate that younger participants (on campus students) tended not to consider schools with the same degree of importance as their older counterparts. Where once schools were considered prime agents of knowledge dissemination and social change, it now appears that digital technologies are more important in fulfilling these roles than schools (Alexandersson & Limberg, 2012; Buckingham, 2013). Only the on campus cohort ranked the concept of 'feel'. This finding could indicate that this younger cohort was more emotionally engaged in PE classes. Alternatively, it may suggest that less time had elapsed between on campus participants' school experience and this reflective exercise, thus the emotion remained attached for the younger participants in comparison to the older, off campus participants.

*What Were Other Alternative Actions That Could Have Been Undertaken: Group Trends.*

This section provides a summary of the concept rankings, maps, and selected extracted text for cross-referenced responses to the reframing question “What were other alternative actions that could have been undertaken...” The ranked concepts are listed at the end of this paragraph and the cut-off point was 32.7%. Following in Figure 6 the combined responses to this question are shown, and Figures 7 to 10 provide the breakdown for male and female participants in both off and on campus groups. The top five concepts for all PPST were:

- ‘teacher’ (absolute count = 232, ranked concept = 100%)
- ‘students’ (absolute count = 232, ranked concept = 100%)
- ‘alternative’ (absolute count = 141, ranked concept = 60.7%)
- ‘lesson’ (absolute count = 84, ranked concept = 36.2%)
- ‘group’ (absolute count = 76, ranked concept = 32.7%)



**Figure 6: Leximancer map showing themes (circles) and concepts (dots) for all responses to the reframing question: What alternatives for action were there? (n=188)**

The data were taken from the PPST texts (n=188). However, some individuals (n=29) did not respond to this component of the question. Figure 6 shows five theme circles. In order of ‘brightness’ the theme *teacher* contains three of the top five concepts (‘lesson’, ‘teacher’ and ‘group’), whilst the theme *alternative* contained its namesake, that is, the concept ‘alternative’. For the theme *students*, the concept was ‘students’. All the concepts were closely clustered indicating a tight relationship between them. For all the PPST, the two most frequent concepts were ‘students’ and ‘teacher’, albeit in reverse order to the results when the total responses for PPST texts were analysed.

*Cross-Referenced Concepts*

The concepts chosen for cross-referencing were 1) 'teacher' and 'alternative' and, 2) 'teacher' and 'lesson'. These concepts were chosen to gather and report further information relevant to the research question. Cross-referencing 'student' with either of the other two concepts revealed that the textual references were virtually identical. The cross referenced concepts for 'teacher' and 'alternative' were divided into four categories of response: (i) in depth perspectives 'looking back' and 'looking forward' that had broader implications for future teaching ( $n=22$ ), (ii) listed alternative actions from the PPST perspective, that a teacher could have undertaken to address the particular incident in question ( $n=86$ ), (iii) alternatives that involved an explanation about individual reactions ( $n=13$ ) and, (iv) non-specific alternatives ( $n=15$ ). The following four extracts provide, in sequence and for the purposes of brevity, one selected example from each category.

- (i) *The joy and fulfilment each individual experience from a solo, group or team activity, as well as the health benefits, are the reasons we participate in such activities in the first place. This notion also needs to be reinforced so each and every school aged child is given the same opportunity regardless of ability and is given the same chance to succeed, in whatever capacity they can. Along with given the same accreditation for any success, regardless of how slight.*
- (ii) *My teacher could have taken alternate actions to avoid this situation. Firstly, by explaining the rules and how to play the sport regardless of who may or may not know the activity. Another alternate action could have been to break down each element of the game and create activities to develop each element. Perhaps divide the students into groups with each group participating in an activity in relation to the sport, such as passing the ball with the correct foot movements, shooting goals in the netball hoop or blocking opponents. Then rotating each group after a set time to ensure that every student developed basic skills for the sport.*
- (iii) *My alternatives for action could have been that I not have gone to the event at all, arrive at the event and decided not to run or not run my best but rather simply take my time and enjoy more of the experience per say.*
- (iv) *There should be alternative activities that all students could perform during the lesson so they feel included and valued.*

Cross-referencing for 'teacher' and 'lesson' indicated that the participants had definite opinions regarding what a teacher(s) 'should' ( $n=13$ ) or 'could' ( $n=38$ ) do in the various instances. The word 'should' implies a definite solution, whereas the use of the word 'could' offers possibilities of alternatives. The following paragraphs provide an example of both possibilities, using the terms 'should' and 'could'.

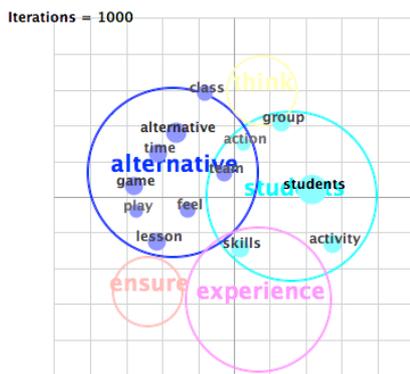
- (i) *The teachers should have first taught us some basic dance moves and then slowly put the dance together in small sections.*

- (ii) *While the teachers at the school could have programmed the lessons differently with a focus being only on skills and fun games within the school, perhaps they thought providing students with an opportunity to apply those skills in a competitive game would be both fun and rewarding.*

The important findings addressing alternative actions were that the participants did engage in a reflective activity and suggested a number of alternative possibilities regarding how, in future, school-based PE incidents could be managed. Also of note was the variety of levels of complexity associated with the various responses. Although this aspect of analysis was outside the scope of this paper, the intention is to follow this matter up in a future paper.

**Off/On Campus and Sex Comparisons of Alternative Solutions**

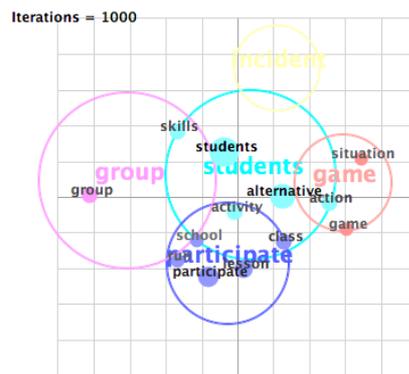
Figures 7 to 10 show the breakdown for off and on campus, female and male students'. The maps once again show the themes and concepts. The information shown following each map provides a list of the top five ranked concepts.



Main concepts on campus female students  
(n = 48)

- 'students' (absolute count = 148, ranked concept = 100%)
- 'alternative' (absolute count = 74, ranked concept = 50%)
- 'game' (absolute count = 61, ranked concept = 42.1%)
- 'skills' (absolute count = 55, ranked concept = 37.1%)
- 'activity' (absolute count = 49, ranked concept = 33.1%)

**Figure 7: On campus female student**

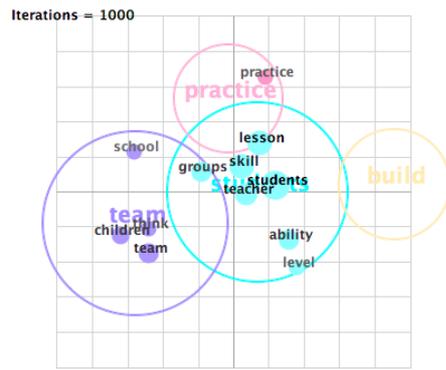


Main concepts off campus female students  
(n = 109)

- 'students' (absolute count = 67, ranked concept = 100%)
- 'alternative' (absolute count = 53, ranked concept = 79%)
- 'participate' (absolute count = 37, ranked concept = 55.2%)
- 'lesson' (absolute count = 23, ranked concept = 34.3%)
- 'class' (absolute count = 21, ranked concept = 33.1%)

**Figure 8: Off campus female students**

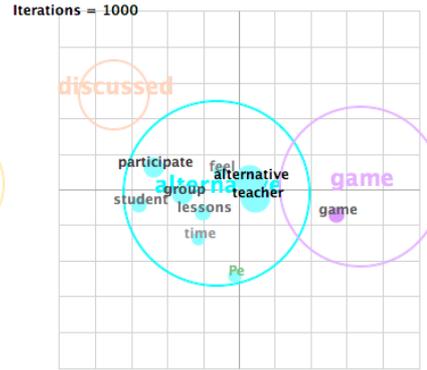
Given that the data are related to 'alternatives', one would expect this concept to appear in each concept list. Of particular interest was the absence of the concept 'teacher' from the top five concepts for both off and on campus female participants.



Main concepts on campus male students  
(n = 14)

- ‘students’ (absolute count = 17, ranked concept = 100%)
- ‘lesson’ (absolute count = 13, ranked concept = 76.4%)
- ‘skill’ (absolute count = 12, ranked concept = 70.5%)
- ‘teacher’ (absolute count = 12, ranked concept = 70.5%)
- ‘team’ (absolute count = 10, ranked concept = 58.8%)

**Figure 9: On campus male students**



Main concepts off campus male students  
(n = 17)

- ‘alternative’ (absolute count = 17, ranked concept = 100%)
- ‘teacher’ (absolute count = 17, ranked concept = 100%)
- ‘participate’ (absolute count = 8, ranked concept = 47%)
- ‘group’ (absolute count = 7, ranked concept = 41.1%)
- ‘game’ (absolute count = 5, ranked concept = 29.4%)

**Figure 10: Off campus male students**

Overall, the concept ‘alternatives’ was absent from the on campus male participants. The concept ‘teacher’ appeared for both off and on campus students of both sexes. *Participate* appeared for both off campus male and female participants, whereas *skill* appeared for both off and on campus male participants. These results suggest that because the on campus cohort had more teacher-directed PE classes in their unit, there was little room for alternative options during this time. Given that on campus students were, on average, much younger than off campus students, one would expect that the reverse scenario would be evident. However, there was high agreement between both cohorts with regards to the consideration of skills as a major component of PE classes. It can be argued that these PPST have more or less maintained traditional ideas of a PE class, mainly focussing on the development of skills, which can be linked to a technocratic perspective of PE (Tinning, 1990). This approach may mean that PPST may face some challenges when teaching PE at school if their conceptions of teaching are not reframed.

## Discussion

This paper described the results of a PPST teaching program change in an attempt to improve the educational experience for this cohort in preparation for teaching PE. Students were provided with an opportunity to reflect on their schooling in terms of a critical incident (positive or negative) and interrogate that memory from a range of perspectives. This activity has been linked to improving the quality of PE by providing those new scheme teachers with an alternative perspective of their own

positive or negative experience and to mobilise the indifferent teachers as Pickup (2012) suggested. Furthermore, teachers may try to avoid repeating the negatively experienced models and put forward the positive ones (Morgan & Bourke, 2008; Morgan & Hansen, 2008; Murphy & Cosgrave, 2010; Pickup, 2012) and respond with greater sensitivities to those students at the lower levels of physical competence (Allen, 2003; Morgan & Hansen, 2008).

There were a surprisingly even numbers of positive and negative incidents recalled by the participants ( $n=214$ ). The mode of enrolment (off or on campus) can also be viewed as a proxy for the variable of age of the students. This age factor appeared to provide both a perspective of the distance from the incident to the amount of emotion still attached to the experience. Female participants tended to attach more emotion to the lesson and the teacher whereas the male counterparts tended to align more with what occurred in a team game and at school in general. This situation, whereby there was greater alignment with sport for males tends to reflect a greater relevance of incidents attached to sport for males than for their female counterparts.

Comments regarding the use of reflective practice point to the finding that PPST benefitted from this experience in a number of ways, not the least of which was having the opportunity to evaluate their position with regards to the incident. There are, however, different levels of complexity in the responses. This complexity is worthy of further analysis and investigation. More specifically because the general trends of how the male and female participants responded differently to this process there is the potential opportunity to investigate expectations based on the varied experiences of girls and boys in their schooling in terms of PE and/or sport. In addition, this factor has an impact on their teaching frame towards PE with greater experience providing a more nuanced and emancipatory type of alternatives to reframe their experiences. This facet augurs well for a new view and enhanced approach towards the teaching of PE in the primary schools in which these new scheme teachers have the opportunity to teach.

Overall the analysis of the findings presented in this paper provide some evidence of the complexities of disrupting previous beliefs regarding teaching PE amongst the participants. Notwithstanding these insights, more research of within-participant benefit of this learning experience would be beneficial in order to develop further evidence of the impact of incorporating teacher biography experiences into primary preservice teacher education programs for the long-term approach to teaching quality PE in schools.

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