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# **Teaching Physical Education: Primary School Teachers as Learners**

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## ABSTRACT

This research focused on physical education (PE) teaching and learning in New Zealand primary school settings. The project had two key aims: first, to develop an understanding of the knowledges primary teachers use to teach PE, prior to a one-year professional development (PD) programme; and second, to evaluate the impacts of a PD programme on knowledges associated with teaching PE, and the complexity of subject specific knowledge development for generalist teachers. Specifically, the impact of the *Physical Activity Initiative* professional development (PD) programme (Ministry of Education, 2005a) on primary classroom teacher's knowledge and practice was investigated.

The project was interpretive in orientation and used qualitative methods such as teacher interviews, lesson observations, questionnaires and document analysis to gather data related to teachers' understanding of their pre and post PD programme experience. Twenty-five teachers from ten schools involved in the *Physical Activity Initiative* PD programme participated in the study.

Theories of teacher knowledge and understandings of effective PD provided a framework for data analysis. In contrast to most previous studies that have involved the researcher as both instigator and deliverer of physical education professional development (PE-PD), this research involved the researcher as the outsider, seeking an outside-in and inside-out perspective.

The research findings indicated that promoting teacher learning through PD is complex. The sample of primary school teachers gained benefit from PD opportunities that allowed for the transfer of pedagogical strategies and skills from the classroom to the PE context. However, there was evidence that these learning opportunities needed to be balanced with opportunities to develop PE content knowledge.

Consequently, it was theorised that PE-PD for primary teachers needs to consist of connected and explicit knowledge building experiences associated with PE: its nature, purpose, curriculum, content, and pedagogical strategies. It was further hypothesised that effective PE-PD design would support teachers to blend these knowledges in ways that

allow them to develop appropriate learning experiences for their particular students.

The findings also signalled that PD resources provided teachers with examples of practice and, as such, they had the potential to enhance “quality” PE learning and teaching. The study drew attention to the role resources played in standardising PE in primary schools, thus advancing PE teaching yet restricting teachers’ broader knowledges and limiting their range of practices in PE. The findings of this study challenge PD providers (pre- and in-service) to consider the educative role of resources and the ways resources can be used to support teachers to become independent practitioners who utilise outside ‘experts’ without becoming totally reliant on them.

Finally this study illustrates the importance of recognising the teacher as both learner and teacher. It is imperative that teacher learning sits alongside student learning as a central aim for PD programmes, since teacher learning is the foundation for changes in learning outcomes for students.

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## CHAPTER ONE: INTRODUCTION

Physical education (PE) has been a subject in the compulsory New Zealand primary school curriculum for over a century. In recent years PE has undergone a number of policy changes. A new PE curriculum, *Health and Physical Education in the New Zealand Curriculum* (Ministry of Education, 1999), was developed in the late 1990s. Changes to *National Education Goals* (NAGs) and *Administration Guidelines* (NEGs) (Ministry of Education, 2005a) during 2004 gave priority to regular quality physical activity that developed movement skills for all students, especially in years 1–6 (primary school). These policy changes in turn appeared to raise the expectations placed on classroom teachers who were responsible for delivering PE in the primary school. These curriculum and policy changes have resulted in nationally run professional development (PD) initiatives designed to support primary classroom teachers in enhancing student engagement and achievement in PE. Late in 2007 the Ministry of Education released *The New Zealand Curriculum* (Ministry of Education, 2007a) and guidelines for sustainable physical activity in school communities (Ministry of Education, 2007b). While not explored in this study, as they were released after data were collected, it is important to recognise that these new policy documents present more changes for primary classroom teachers to negotiate.

In spite of these changes, little is known about current PE practice in New Zealand primary schools, how teachers have responded to changing curricula and policy, or the impacts the associated PD has on teaching and learning in PE. This scarcity of research into PE programmes and practices in primary schools restricts teacher educators' ability to design, develop and deliver good quality, evidence-based PD to support classroom teachers, or to advocate for increases in funding or a for long-term PD and research programme.

The work undertaken in this thesis seeks to contribute to understandings about teaching and learning PE in primary schools. By exploring the impacts of one PD programme on a sample of twenty-five classroom teachers, with particular emphasis on teacher knowledge development, the research endeavours to provide evidence to inform the future direction of PE curriculum and policy development, and the design and delivery of PD for primary school teachers.

This chapter sets out to contextualise the research; first, by exploring the context of the study, and second, the current research will be outlined, followed by a description of the researcher's background, and the way this thesis is organised.

## **THE CONTEXT FOR THE STUDY**

This section provides the contextual background to the study. It explores the context of primary schools, curriculum and policy change in the New Zealand education system and more specifically PE, and the nature of physical education professional development (PE-PD) for primary teachers.

### **PRIMARY SCHOOLS**

Most New Zealand primary schools operate using a generalist classroom teacher approach. In their role as generalists, classroom teachers are required to teach across seven learning areas, which will become eight when *The New Zealand Curriculum* is mandated in 2010, while also supporting students to participate in co-curricular activities. Growing evidence (Chapman, 2004) and concerns expressed by teachers suggest that the primary school curriculum is crowded, and that teacher workloads are extremely high. The crowded curriculum prohibits teachers from having time for both planning and delivering PE. The increased emphasis on literacy and numeracy appears to have heightened the difficulty for teachers to create space for the 'other' subjects such as PE. This makes it all the more important for research to be completed that explores teachers' knowledges of the PE in the primary school.

In addition to the challenge of trying to squeeze all the learning areas into a crowded school programme, classroom teachers are expected to have the knowledge and skills to plan and teach across all these areas. They are expected to be jacks of all trades (subjects), making it difficult for teachers to acquire sufficient subject knowledge and teaching expertise in all curriculum areas. Given the limited time primary teachers have for subject specialisation in their Initial Teacher Education (ITE) programmes, it is not surprising that classroom teachers may have difficulty understanding and teaching PE. In addition, classroom teachers are expected to undertake in-service PD across all these

learning areas. While a specialist PE teacher might have the luxury of undertaking PD that is solely focused on PE curriculum, content and pedagogical approaches, generalist primary teachers need to address these three aspects in relation to all seven learning areas.

It is equally important to recognise the way PE is positioned in the primary school context. As a predominantly practical subject, it can be argued that PE has been marginalised and accorded low status in relation to other 'core' curriculum areas (Marshall & Hardman, 2000; Sparkes, Templin, & Schempp, 1990). In New Zealand primary schools this has been reinforced by a lack of funding for equipment purchases and inadequate access to large indoor spaces where PE can be delivered in inclement weather.

Of course schools do not operate in a social vacuum. The broader sociocultural arena places extra burdens, pressures, and responsibilities on primary school teachers. Currently sets of meanings circulating regarding children's health and the school's role in 'helping' them appear to contribute to the already complex work environment for primary school teachers.

Finally, it is worth noting the wide variation in school sizes, socio-economic levels and ethnic make-up across the spectrum of primary schools in New Zealand. For example, in this study school sizes varied from a decile<sup>1</sup> ten school with 20 students (of which 79% were Pakeha/New Zealand European and 21% Māori) and two teaching staff, through to a decile one school of 500 students, 22 teaching staff and an ethnic make up of 24% Māori, 29% Samoan, 17% Tongan, 22% Cook Island, 6% Niuean, 1% Pakeha, and 1% Other.

Across the ten schools involved in this study the school contexts varied significantly, as did the requirements and demands on teachers working in these settings. Primary teachers' work is complex and this research endeavours to make sense of how PE is positioned in this complexity.

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<sup>1</sup> A school's decile indicates the extent to which it draws its students from low socio-economic communities. Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities. Decile 10 schools are the 10% of schools with the lowest proportion of these students.

## **CURRICULUM AND POLICY CHANGE**

*The New Zealand Curriculum Framework* introduced by the Ministry of Education (1993) outlined an overview of principles for teaching and learning, in seven specific learning areas, while also “identifying essential skills to be developed by all students, also acknowledging the place of attitudes and values in the school curriculum” (Calderhead, 2001, p. 788). This framework heralded “a return a stronger subjects-based emphasis” (McGee, 1997, p. 134), and the grouping of subject matter into learning areas, that extended beyond the traditional subject boundaries. Throughout the 1990s, and alongside the introduction of the *Curriculum Framework*, the Ministry of Education managed the revision of all national curriculum statements, including health and physical education (HPE). During these years primary schools and their teachers were engaged in a range of curriculum implementation PD contracts to support teacher understanding and implementation of the ‘new’ statements. To add to the complexity, other PD initiatives such as *Assessment for Learning*, *The Numeracy project*, and ICT initiatives were running concurrently in primary schools nationally. This succession of reforms and initiatives has been a major feature of New Zealand’s education landscape for the past 16 years. These have placed primary teachers on a treadmill as they have attempted to keep pace with expectations to meet the requirements of curriculum and policy change across all seven learning areas.

### ***Physical Education Curriculum and Policy***

The introduction of *Health and Physical Education in the New Zealand Curriculum* [HPE Curriculum] (Ministry of Education, 1999) promoted a philosophical shift from the previous physical education curriculum, that reflected a performance pedagogy orientation (Culpan, 2000), to a more holistic and socio-critical approach. The New Zealand HPE curriculum challenged teachers to rethink their philosophical understanding of PE, and pedagogical practices associated with a move from their traditional motor skill and sport-based programmes, to teach a wider range of curriculum aims. The four general aims of the HPE curriculum were focused on students learning to:

- develop the knowledge, understandings, skills and attitudes needed to maintain and enhance personal health and physical development (known as Strand A);
- develop motor skills through movement, acquire knowledge and understandings about movement, and develop positive attitudes towards physical activity (Strand B);
- develop understandings, skills, and attitudes that enhance interactions and relationships with other people (Strand C);
- participate in creating healthy communities and environments by taking responsible and critical action (Strand D).

These general aims were further broken down to provide teachers with 15 achievement objectives to guide their planning and programming in PE. Strands A, B and D each had 4 achievement objectives, while Strand C only had three. The achievement objectives were “expressed at eight progressive levels, appropriate to students’ development and maturity at successive stages as they moved through junior primary to secondary school” (Ministry of Education, 1999, p. 13).

The HPE curriculum was the sixth ‘new’ curriculum document that teachers in primary schools were introduced to and expected to understand. This curriculum, while the sixth curriculum to be released, was significantly different from the earlier documents, including Science, Mathematics and English. Not only was it another curriculum document for primary teachers to comprehend, it was also significantly more philosophically based, and less prescriptive, than some of the curriculum statements of the other learning areas. In a sense, it required that teachers would explore alternative philosophical perspectives, and examine their knowledge base, in order to implement the curriculum in primary schools.

The New Zealand HPE curriculum, along with corresponding curricula in Australia, undoubtedly adopted a socio-critical perspective. This invited teachers to provide learning opportunities that encouraged students to explore the movement culture in relation to social, cultural, environmental and, most notably, critical discourses (Penney & Harris, 2004; Tinning, 2002). This shift from a traditional activity orientated framework towards a holistic, socio-critical curriculum required educators in the secondary, primary and tertiary sectors to rethink their understanding of what constituted PE, and challenged the knowledge

base required by teachers in order that they know what and how to teach PE.

Also, PE teachers have been exhorted by policymakers to take action over broader social agendas associated with public and political concerns, about higher levels of childhood obesity and lower levels of physical activity. Attention has focused on the role of physical activity in primary school programmes with these concerns in mind. This has led to the development of new policies addressing government concerns about childhood health issues. In December 2004, the then Minister of Education, the Hon. Trevor Mallard announced the introduction of the *Physical Activity Initiative (PAI)* (Mallard, 2004; Ministry of Education, 2005a) to encourage primary students to be more physically active. Mallard (2004) suggested that the government was investing in this area because:

- of the concerns about declining PA levels amongst New Zealand children;
- research has shown that PA and motor skill development during school time improves students' health and wellbeing and their academic achievement;
- evidence suggests that young people are not picking up the skills and attitudes that will encourage them to be physically active throughout their lives.

In light of these concerns amendments were made to National Education Goal (NEG) 5 and National Administration Guideline (NAG) 1 (i) (c) to prioritise quality physical activity that develops students' movement skills (Ministry of Education, 2005a). Changes to the NEG and NAG regulations presented primary school and classroom teachers with the additional responsibility of ensuring that priority be given to regular physical activity, both curricular and co-curricular.

### ***Teachers' Response to Curriculum and Policy Change***

With the exception of studies by the Education Review Office (ERO)(2001, 2007a, 2007b), McGee, Harlow, Miller, Cowie, Hill, Jones et al. (2003, 2004), Petrie, Jones and McKim (2007) and Ussher (2001) there has been an absence of research exploring how HPE curriculum change and policy initiatives have been received, interpreted, understood and implemented by generalist teachers in primary schools throughout New Zealand. The

studies that have been completed have been based on self-reports from teachers. In 2004 the Ministry of Education commissioned a national survey to explore teachers' experiences of implementing the HPE curriculum (McGee et al., 2003; McGee et al. 2004). This provided systemic data on what had changed in primary school physical education since the curriculum became mandated. The research showed that teachers felt that they had a "greater depth of knowledge [about the curriculum] and they had been able to take away ideas about how to plan and implement the curriculum" (McGee et al., 2004, p. 265). Self-reported data from teachers indicated that they had greater knowledge of the curriculum and better understandings of the terms, structure and content of the curriculum documents. This research did not provide detail about teacher knowledge or practices of PE at the micro level for teachers and students. The self-reporting nature of the stocktake did not explore what generalist teachers understood about the curriculum for PE, what this meant for their programmes and teaching practices in primary schools, or how PD had contributed to teachers' knowledge of the curriculum.

While the 2007 studies undertaken by ERO need to be acknowledged for providing some insights into what equates to effective teaching of PE in the primary school, it is important to note that the data were based on evaluative decisions about teacher knowledge and effectiveness made by review officers with limited, if any, background in PE curriculum and pedagogy. In contrast to anecdotal comments from advisers working with teachers in primary schools, and the evaluative research undertaken by Petrie, Jones, & McKim (2007), the ERO study suggests that primary school teachers have appropriate subject and pedagogical knowledge to contribute to high levels of student engagement (Education Review Office, 2007a). This contrasting view suggests that further exploration of what primary teachers know about the purpose, content and pedagogical strategies for PE is warranted, if we are to understand and better support the professional learning needs of these teachers.

Apart from the research undertaken by government organisations, Ussher (2001) has provided the most insight into the primary generalist teacher and physical education. His Masters thesis explored how five primary teachers received, implemented and assessed physical education as a result of the introduction of the HPE curriculum. Central to his

research was the notion that curricula are created by a centralized group “but undergo re-contextualisation and re-creation as they are implemented in various school settings” (p. ii). His research offers insight into how generalist teachers work with assessment as part of curriculum documents. It did not, however, explore the ways in which generalist teachers understand PE curriculum knowledge and what this means for practice.

While this research indicates a shift in teachers’ PE rhetoric, little is known about whether these shifts have translated into changes in the practice of PE lessons in New Zealand primary schools. Researchers in other countries (Bechtel & O’Sullivan, 2006; Sparkes, 1987) have highlighted the finding that while teachers’ talk appears to reflect shifts in understanding, the practice of PE in primary schools remains unchanged. This study seeks to provide some clarity on the differences and similarities between teacher rhetoric and practice in New Zealand primary school PE.

## **PHYSICAL EDUCATION PROFESSIONAL DEVELOPMENT**

There are over 23,000 generalist teachers in New Zealand primary schools (Education Counts, 2004). To assist them to respond to educational reforms associated with curriculum and policy, a range of PE specific professional development (PD) national initiatives have been offered to schools by the government, through advisers to schools, including the:

- HPE curriculum implementation programme (during 1999-2001);
- School Community Physical Activity Project (2004 – 2007); and
- Physical Activity Initiative (2005 – ongoing), which included two variations of PD. One of the variations from this initiative is the PD programme under investigation in this thesis.

While these opportunities have been available for all teachers and schools, the nature of primary schooling in New Zealand means that as generalist teachers, not all teachers have been recipients of PD that relates specifically to teaching and learning PE. Dewar (2001) suggests that only 59% of primary teachers have accessed these national initiatives. Despite opportunities for teachers to be involved in PE specific PD, anecdotal comments from School Support Services (SSS) advisers,

tertiary providers, pre-service teacher education students, and primary teachers themselves, have suggested that professional learning opportunities have not translated into changes in PE programmes or the teaching and learning of PE in New Zealand primary schools. To date in New Zealand, there is a scarcity of localised research in this area, and anecdotal comments form the basis of understandings regarding primary teachers' knowledges and practices in physical education.

### ***Model 2 of The Physical Activity Initiative***

The PD programme discussed in this thesis was part of the broader *Physical Activity Initiative (PAI)*. The *PAI* aimed to:

- build teacher and school capability in order for students to develop knowledge, skills and attitudes which will motivate them to participate in regular physical activity over their lifespan;
- provide teachers and schools with an understanding of the regulation changes to NAG 1 and NEG 5 in relation to clarifying the differences and similarities between PE and physical activity;
- strengthen teachers' pedagogy related to the HPE curriculum (Ministry of Education, 1999), in order to provide needs-based quality physical activity experiences that develop movement skills; and
- challenge teachers to think critically about physical activity experiences for students in their school and to take action where appropriate, in order to enhance the school's physical activity culture.

The *PAI* saw the Ministries of Education and Health, together with Sport and Recreation New Zealand (SPARC) working collaboratively through a tripartite agreement to build strong, confident learning communities with a focus on effective teaching and learning in the HPE curriculum. The *PAI* was intended to complement schools' current HPE programmes and co-curricular physical activity by providing additional PD to schools and teachers. Two variations of the PD associated with the *PAI* were offered to schools. These were simply called Model 1 and Model 2. Model 1 was designed to support teachers and schools that were perceived by staff in the advisory services to have already made progress in redeveloping their programming and teaching of PE. In contrast, Model 2, the focus for this study, was to

*offer in-depth, whole-school professional development for schools that need more focused support. A physical education adviser and co-curricular educational personnel will spend up to eight days over four terms with each participating school (Ministry of Education, 2005a, p. 3).*

*Model 2 ... is for professional development based on the unique needs of the school ... The adviser will help the school to examine their existing Health and Physical Education programme/s in light of the current new physical activity initiative. A focus on teaching and learning in physical education will be the priority for physical education advisers (Ministry of Education, 2005b, p. 1).*

Model 2 ran for the 2006 school year, starting at the beginning of February and finishing at the end of term four. Over 50 schools throughout New Zealand were involved in Model 2, during 2006. Advisers in seven regions worked with clusters of schools to provide the PD. The PD programme consisted of a range of learning opportunities, including:

- cluster workshops, held out of the school context for lead teachers from each school;
- staff meetings in each school; and
- advisers working with individual teachers.

Alongside the PD, an evaluative research project was undertaken (Petrie et al., 2007), funded by the Ministry of Education, to explore the impacts of professional learning on curricular and co-curricular physical activity, in ten schools across four regions. It is from this research project that this thesis has been developed. What differentiated the thesis from the evaluative research project was the focus of the research questions. The research contract focused on the impacts of professional learning on teachers' ability to deliver physical activity (curricular and co-curricular), as well as exploring impacts on:

- school physical activity cultures;
- students' knowledge and attitudes towards physical activity and their practice in and outside of the school day; and
- students' movement skill development and achievement.

The thesis focused specifically on teachers' knowledges of PE, and the impacts of PD on these.

## **THE RESEARCHER**

My own experiences as a PE teacher trainee, as a student in the Master of Teaching and Learning programme, as a secondary PE teacher and as a member of Physical Education New Zealand (PENZ), have been central to my developing understanding of PE. As a PE specialist who taught in secondary schools for ten years, and as a teacher in physical education teacher education I have been both a recipient of PD designed to support secondary teachers to bring about policy/curriculum change, and provider of PD, predominantly working with primary classroom teacher trainees. These experiences have assisted me in understanding numerous issues related to PE curriculum, knowledge and implementation. At the same time, I am aware that there is much not known about this complex field. It is this awareness that led me to this thesis. I wanted to embark on research that would be valuable for teacher educators and teachers.

## **THE CURRENT RESEARCH**

The current research focuses on the teaching and learning of PE in primary school settings. Specifically, it investigates the impacts of a nationally run PD programme designed to enhance primary classroom teachers' knowledges and pedagogical approaches in curriculum PE.

The project had two key aims: first, to develop an understanding of the knowledges primary teachers use to teach PE, prior to a one-year professional development (PD) programme; and second, to evaluate the impacts of a PD programme on knowledges associated with teaching PE, and the complexity of subject specific knowledge development for generalist teachers.

## **OVERVIEW OF THE THESIS**

The research presented in this thesis contributes to an understanding of educational issues in teacher knowledge, PD and PE in New Zealand primary schools. As part of an essential learning area in *The New Zealand Curriculum Framework* every classroom generalist teacher is expected to provide effective learning experiences in PE. This research presents an opportunity to investigate the experiences and

understandings of teachers charged with teaching PE in New Zealand primary schools.

An overview of current understandings of teacher knowledge and professional development, particularly as they relate to PE, is explored in more detail in next chapter, Chapter Two. This chapter concludes with the research questions underpinning the study.

This is followed in Chapter Three by an outline of the methodology, including a discussion of the interpretive framework underpinning the study, and an examination of the methods for data collection and analysis. Chapter Four presents the findings highlighting teachers' knowledges in PE pre and post the PD programme. This section also explores teachers' experiences and feelings about the content and delivery of the PD programme in order to contribute to understandings of the impacts of PD on teachers' knowledges.

The findings in Chapter Four are drawn together in Chapter Five. This chapter discusses key themes that emerged. Each theme is illustrated by reference to the data and compared and contrasted with the existing literature. Where new insights emerge, these are highlighted. The final chapter, Chapter Six, lists the implications for practice and research in PD and PE that have emerged from this study and the themes in Chapter Five.

## CHAPTER TWO: LITERATURE REVIEW

Chapter One outlined the focus and justification for the study of the impacts the *Physical Activity Initiative (PAI)* professional development (PD) programme had on a sample of primary teachers' knowledges of physical education (PE) and their teaching practices in PE.

This chapter reports the findings from a review of relevant national and international literature on teacher knowledge and PD. Each of these areas is explored both broadly and with a specific focus on physical education (PE) in primary school settings. An outline of the methods used to carry out the literature search and the framework used for reviewing and reporting relevant literature is detailed. The review has two main directions: first, it explores the purpose of PD and what constitutes effective PD policy and practice; and second, it explores what is considered to be the types of knowledge that teachers need for teaching PE.

### ***The Literature Review Methodology***

This literature review was based on a framework relating to the broader objectives of the research, and the specific research questions. This led to a focus on the areas of teacher knowledge and PD with a particular focus on physical education (PE) in the primary school. Following the search protocol used by Carr, McGee, Jones, McKinley, Bell, Barr, and Simpson (2000), electronic and physical searches were made of journals, books and reports which were considered to be important to the review framework. Electronic searches were made of library catalogues and databases using key words identified in a preliminary planning session. Electronic databases used included EBSCO, AEI: Australian education index, Education Research Theses: Database of Australian theses, Google Scholar, JSTOR, Physical Education Index, Proquest, Professional Development Collection, SPORTDiscus and ERIC.

An extensive range of international literature was located. Relevant publications were selected for further study, and were further filtered so that only material pertaining to the research questions was retained. The criteria used to select articles, books and reports for reviewing and summarising were: the presence of material addressing the links and relationships in relation to PD, teacher knowledge and PE; major review

articles; and articles by key researchers. The searching was comprehensive using keywords developed from a preliminary framework to search electronic sources, following up key references suggested by colleagues and supervisors, snowballing from these references, and physical searches of key publications. The value of using a variety of search methods was that each method uncovered new and important references. An internal check ensured that the same references had been located by several approaches. Preference was given to recent publications, but older seminal publications and authors were included.

## **PROFESSIONAL DEVELOPMENT**

It is now widely recognised that teachers need to engage in continuing professional development and learning if they are to keep up to date with systemic change and benefit from advances in what is known about curriculum, teaching and learning. The work of Fullan (1993, 2007) Fullan & Hargreaves (1992) and Guskey (1985a, 1985b, 2002) has had a major impact upon PD literature. It has informed change theory and the understanding of change being a long (and often slow) process. Given that the research for this study occurred across the space of only one year, it is unrealistic to believe that it can do more than draw attention to which factors changed in teachers' practices as a result of a PD programme in a comparatively limited time frame. So while the teacher change literature informs understandings of what makes PD effective, it is not in the scope or purpose of this literature review to examine theories of teacher change. Instead this section explores research focused on conceptualisations of effective in-service PD.

In the PD literature there is evidence that teacher learning and PD often occur in informal, serendipitous ways "at intersections of a teacher's workday" (Wilson & Berne, 1999) such as when they walk through the gymnasium to get the equipment for their next class ready. Nevertheless, the focus of this literature review is on formalised, often compulsory, PD for teachers.

Professional development is seen as a primary vehicle through which systemic education reform and changes are implemented, in order to enhance learning and achievement for students (Carr et al., 2000; Hawley & Valli, 1999; Hixson & Tinzmann, 1990). Traditionally PD has

been based upon a transmission, dissemination and training model where a transferable package of knowledge perceived by outside ‘experts’ as relevant to teaching, and distributed into the hands of teachers in bite sized pieces (Ball & Cohen, 1996; Lieberman, 1995) ready for them to implement into their classrooms. In this traditional yet still practiced view, one off workshops for teachers are conducted outside of the classroom context based on the idea of updating teachers with new ideas and information (Hawley & Valli, 1999). However, there are problems with this approach. As Armour and Makopoulou (2006) highlight, PE teachers report that much PD is lacking in coherence, relevance, challenge and progression, and is out of context and not easily transferable to their schools. Traditional models of PD highlight an inherent contradiction between teacher learning and student learning. On one hand, it seems widely accepted that teachers should provide their students with student-centred approaches and a wide array of learning opportunities based on their prior experiences. On the other hand, traditional PD denies these approaches to teachers when they are the learners (Lieberman, 1995). Single session PD has been heavily criticised for many years and Killion (2005/06) pointed out that “one-shot PD sessions” will not transform teacher behaviour and student learning, therefore,

*ongoing sessions of learning, collaboration, and application, accompanied by school- and classroom-based support, over an ample time period are necessary to incorporate new behaviours fully into a teacher's repertoire (p. 5).*

To this end, there have been shifts in conceptions of PD that have been informed by revised views about teacher change, which will be discussed in the next section. As awareness of similarities between the way teachers learn and the way students learn has increased (Guskey, 2003; Lieberman, 1995) and alternative visions of what is considered effective PD have come about.

## **EFFECTIVE PROFESSIONAL DEVELOPMENT**

Recent literature shows how at least some PD has become more focused on providing teachers with opportunities

*to rethink their own practice, to construct new classroom roles and expectations about student outcomes, and to teach in ways they have never taught before - and probably never experienced as students (Darling-Hammond & McLaughlin, 1995, p.597).*

Overviews by Richardson and Placier (2001), Darling-Hammond and McLaughlin (1995), Hawley and Valli (1999), Wilson and Berne (1999), Putnam and Borko (1997), Doolittle and Schwager (1989), and Richardson (2003) demonstrate a history of changing views on PD and detail how educational researchers have come to understand the requirements in design and delivery of effective in-service PD for teachers. Across these studies and reviews several key factors emerge, and these provide an evidence-based framework in this thesis for considering what is required for effective PD. While these are presented in this literature review as separate areas, in practice they are interrelated. These are discussed in more detail below. Before reviewing the literature it is important to highlight that much of the research into PD, and certainly PE-PD, explores what makes for effective PD for teachers engaged in one PD programme, or the teaching of one subject. In contrast the primary teachers involved in this study worked in a complex context, which required them to consistently and simultaneously negotiate multiple PD programmes across a variety of learning areas.

### ***School-wide and Context Specific***

Physical education PD in New Zealand has paralleled the PD in Australia and the UK, in that it has been dominated by one-off workshops run by outside providers, with little link made to the context in which teachers work (Armour & Yelling, 2004; Macdonald, 2004). Teachers could not always see the relevance of these mass in-service courses in relation to the specific needs of the participants and their teaching. They were often presented as a melange of ideas abstract from classroom life. Outside experts, traditionally the preferred providers of PD, may know little about the local context of the individual schools, the contextual barriers that exist in the target school setting, and are not always viewed as credible by the teachers (Bechtel & O'Sullivan, 2006; Ko, Wallhead, & Ward, 2006). This appears to make knowledge more difficult to transfer into individual school contexts (Duncombe & Armour, 2004; Lieberman, 1995).

There has been a shift to an interest in PD that is based in schools and teachers' own classrooms with better alignment between classroom conditions, and school contexts and teachers' daily experiences and concerns (Armour & Duncombe, 2004; Armour & Yelling, 2004; Guskey,

2003; Pope & O'Sullivan, 1998; Putnam & Borko, 2000; Richardson, 2003). This is seen as being more responsive to teachers' own learning, and better able to lead to changing practice, by being more responsive to teachers' needs (Darling-Hammond & McLaughlin, 1995; Garet, Porter, Desimone, Birman, & Yoon, 2001; Hargreaves & Fullan, 1992). PD focused in this way is more likely to help teacher to make connections between the PD and their schools and their teaching (Bechtel & O'Sullivan, 2006; Holland, 2005). However, Guskey (2003) argued that the complexities of the varied contexts in which PD occurs, introduces "a web of factors that influence whether or not a particular characteristic or practice will produce desired results. The nuances of context are difficult to recognise and even more difficult to take into account in the confines of a single programme" (p. 750). This presents a challenge for providers and designers of PD programmes based outside the individual school context because they need to consider each context and the specific needs of the learners.

A potential solution to these shortcomings is PD that is formed around a community of learners. Armour and Yelling (2004) suggested that this would occur as clusters of teachers from one school or several local schools work together to develop their own PD programme, in ways that allow these teachers to provide PD for each other in an on-going manner. This is supported by Lieberman (1995) who suggests that when teacher learning is nurtured in a professional learning community, there is more chance of seeing significant and lasting change in teacher practice. This shift to school-based, context specific PD challenges teachers to see their own classrooms as places for their own learning as well as students' learning (Borko, 2004). There is, however, a paucity of evidence to confirm these claims of greater success. Also, the role of external intervention by PD experts may be a crucial factor, as discussed next.

### ***Ongoing, Long-term, and Continuous with Follow-up Support***

There are perceived benefits when PD is school/context specific and connected to interventions from outside a school. More scholarship has emerged to indicate that there are also benefits in PD that is ongoing and operates regularly over extended periods of time. Some programmes were identified that went beyond one year, for example, SPARK-PE (USA) (McKenzie, Sallis, Faucette, Roby, & Kolody, 1997; Faucette, Nugent, Sallis, & McKenzie, 2002), and the National CPD-PE (UK) (Armour &

Duncombe, 2004; Armour & Makopoulou, 2006; Armour & Yelling, 2004). Most in-service PE-PD programmes, however, do not extend much, if at all, beyond one year, although some that are part of a research study have done so. As previously highlighted most PE-PD consists of “one-day workshops offered by outside ‘experts’ who know little about the particular and specific contexts of a given school” (Ball & Cohen, 1996, p. 197). In view of this evidence on PD, it is disappointing that a pattern of short-term, one-shot PD programmes continues to dominate PE in-service teacher learning.

The processes of changing teaching practice and challenging existing understandings that underpin those practices are very complex and necessitate extended time frames and frequent contact. There is evidence that meaningful learning and change is often a slow, difficult, gradual and uncertain process for teachers, just as it is for their students (Borko, 2004; Guskey, 1985a, 1985b; Richardson, 2003). Therefore, PD that is sustained and intensive is more likely to have an impact, than the shorter PD (Doolittle & Schwager, 1989; Garet et al., 2001; Hixson & Tinzmann, 1990; Lieberman, 1995) that is currently common in PE. From an analysis of key literature a number of factors can be identified that are important PD goals in PE. Ongoing, long-term, continuous learning in the context of school and classroom and with the support of colleagues provides opportunities for teachers to:

- Have in-depth discussion of content, student conceptions and misconceptions, and pedagogical strategies (O'Sullivan & Deglau, 2006);
- Try out new practices in their classrooms and obtain feedback (Deglau & O'Sullivan, 2006; Wilson & Berne, 1999);
- Work to establish and maintain communities of practice/learners based on supportive yet challenging climates (Fullan, 1993; Holland, 2005) that support changes in practice that are sustained more than a year beyond the end of the PD grant period (Deglau & O'Sullivan, 2006). As Richardson (2003) highlights the insular nature of classrooms can make the development of communities of learners difficult to establish and time is needed to support this development;
- Make links to other reform efforts (Garet et al., 2001);

- Examine and challenge strongly held beliefs about aspects of teaching such as: about how students learn, the nature of subject matter, expectations for students, or what constitutes effective instruction (Carr et al., 2000; Coburn, 2003);
- Make progressive gains in knowledge, skill, and confidence. Therefore, PD needs to be congruent with and contribute to professional habits and norms of collegiality and experimentation (Wilson & Berne, 1999);
- Critically reflect and challenge content. This requires follow up in the form of a 'web' of PD opportunities that centre around long-term support, coaching in classrooms, ongoing interactions with colleagues (Darling-Hammond & McLaughlin, 1995; Ball & Cohen, 1996)
- Reconceptualise PD and teacher learning as part of the expectations for teachers' roles and an integral part of the school culture (Lieberman, 1995) rather than an "optional adjunct" (Duncombe & Armour, 2004, p. 160).

Research associated with SPARK-PE (Faucette et al., 2002; McKenzie et al., 1997) demonstrates the benefits for classroom generalist teachers involved a two-year PD programme. Envied by colleagues, this intensive PD, with on-going support, helped teachers to become increasingly confident in their abilities to independently implement a PE programme. This study highlights the positive impacts for teachers when they are presented with intensive PD with consistent and on-going support in the form of large group workshops (totalling 48 hours) and advisers working with individual teachers, initially twice a week during year one, and then once a week during year two.

However, the desire for more time comes with cautions. Of itself, more time does not always translate into improved student outcomes (Holland, 2005; Timperley, Wilson, Barrar, & Fung, 2007). To be effective the PD must be well organised, carefully structured and purposefully directed (Guskey, 2003), including support and follow up after initial training (Guskey, 1985b).

While it is evident that ongoing, intensive PD is a preferable option, this is less likely to be a reality in most countries where the low status of PE in the subject hierarchy makes it susceptible to the whims of political

decisions, and less likely to access the long term funding needed to sustain extensive PD programmes.

### ***Teachers as Active Learners***

There is growing evidence that teacher learning is fostered in PD when teachers are actively involved in thinking about and becoming articulate about what they have learned (Armour & Makopoulou, 2006; Lieberman, 1995). The process of active learning in PD “involves teachers both as learners and as teachers” (Darling-Hammond & McLaughlin, 1995) who pursue continued growth in their knowledge, understandings and skills to support the development of themselves and their students. Research indicates that teachers as active learners require opportunities to draw on their experience and help to produce new knowledge, construct their own understandings, become empowered as learners, and connect their learning to the contexts of their teaching (Armour & Makopoulou, 2006; Darling-Hammond & McLaughlin, 1995).

A challenge of developing PD is encouraging teachers to work through the unsettling and uncertain periods that occur when learning something new. This involves creating learning experiences where teachers can admit deficits without being considered deficient teachers (2006), and where teachers become willing to be challenged about their current knowledge and practice. PD that supports teachers as active learners requires teacher educators to treat teachers as they expect teachers to treat their students (Lieberman, 1995; Putnam & Borko, 1997).

### ***Teachers Working Collaboratively***

In contrast to PD workshops that involve one teacher from each school, which is typical in PE-PD in New Zealand, opportunities for teachers to work collaboratively with other teachers in PD programmes encourages them to involve themselves as learners (Borko, 2004; Garet, et al., 2001; Guskey, 2003; Ball & Cohen, 1996). Collaborative approaches appear to generate high quality teacher learning, an increase in teacher confidence, enthusiasm, commitment to changing practice, a willingness to try new ideas, sustained changes in knowledge and practice, and most importantly positive impacts on student achievement (Armour & Makopoulou, 2006; EPPI Centre, 2005).

The evidence in key studies is that the desired impacts require designers of PD to plan opportunities and allocate adequate time to establish

collaborative communities of professional practice prior to undertaking the programme of PD (Armour & Yelling, 2004, EPPI Centre, 2005; Scott, 2002). This is not always a simple process as there is a need to acknowledge the challenges in building trust, credibility, support, collegiality and a sense of community, while still providing opportunities for professional discourse that includes and does not avoid dissonance and critical dialogue (Bechtel & O'Sullivan, 2006; Borko, 2004; Deglau, Ward, O'Sullivan, & Bush, 2006; Ball & Cohen, 1996; O'Sullivan & Deglau, 2006; Wilson & Berne, 1999). To overcome these challenges during the PD, outside providers need to encourage and enable shared learning and support between teacher colleagues, advisers and lead teachers on a sustained basis. This is more easily achieved when PD is based in the school context, as teachers from the same school can work to create shared understandings and provide each other with support as they attempt to implement new ideas (Armour & Makopoulou, 2006).

### ***Relevant and Challenging Content***

Reviews of teacher PD aimed at improving student achievement indicate that focusing on teachers' knowledge of the subject matter, and how students understand and learn it, is what matters most (Cohen & Hill, 2001; Hart, 2005; Holland, 2005; Spiller & Fraser, 2001; Walkwitz & Lee, 1992). Opportunities to teachers to better understand how students learn particular subject matter content, and curriculum materials that support this, are more likely to produce enhanced teacher knowledges and skills, classroom practices and improved student learning outcomes (Borko, 2004; Garet et al., 2001; Guskey, 2003; Holland, 2005).

In line with broader education research, PE researchers have come to similar conclusions about content from their investigations of PD programmes offered to teachers. Armour and Yelling (2004) propose that teachers should be involved in determining the content of what they need to learn, but also encouraged to focus on what students learn and how to address the different problems students may have with learning particular content. In a study of PE-PD for three practising primary teachers, Armour and Duncombe (2004) suggested that the content of PD for these teachers needed to be closely linked to the teachers' classroom practice. Bechtel and O'Sullivan (2006) advocate for PD content that balances the priority on content (subject matter of focus), the teaching-learning process, and how best to deliver and assess content, as well as

the personal development of the teacher as a professional educator. Ko, Wallhead and Ward (2006) suggest that the more complex PD content, for example, PD that requires changes in both teachers' general pedagogical and subject matter knowledge, the greater the requirement for support resources. Their findings suggest that teachers benefit most from this complex PD when they are provided with resources that help them to integrate new curricula and instructional skills into their existing contexts.

### ***Conceptually Challenging***

It is widely recognised that teachers' knowledge and beliefs are instrumental in the curriculum decision-making process. Beliefs are more personal and experiential in origin and appear to influence what and how knowledge will be used. Beliefs may also play a part in knowledge disavowal. The acceptance or rejection of new knowledge is instrumental in curriculum innovation, and in the enhancement of student learning in PE (Ennis, 1994; Hutchinson, 1993; Nespior, 1985). Because teachers draw on their prior knowledge, beliefs, and experiences to interpret and enact reforms, they are likely to "gravitate" toward approaches that are congruent with their prior practices (Spillane, 2000, p. 163), focus on surface manifestations (such as discrete activities, materials, or classroom organisation) rather than deeper pedagogical principles (Spillane, 1999; Spillane & Zeuli, 1999). Consequently, it has been shown that they graft new approaches on top of existing practices without altering classroom norms or routines (Coburn, 2003). Changing attitudes and beliefs can therefore be among the most difficult aspects of the PD experience, but it is essential to the improvement of teaching practices to understand the belief structures of teachers (Hixson & Tinzmman, 1990; Pajares, 1992).

### ***Challenges***

From the review of literature in PD, several challenges to determining the appropriate content for effective PE-PD have been identified. Given the requirements of having to teach and learn about multiple subject areas it is not surprising that "not all primary teachers are enthusiastic about teaching PE and so need to be convinced that time spent on PE-CPD will be interesting and worthwhile" (Armour & Duncombe, 2004). However, this presents a challenge for PD providers, who have to negotiate a

programme of content that bridges the gap between the teachers' desire to gain ready-to-use tips, tricks, techniques and tools, with the expectations and the goals of the PD (Bechtel & O'Sullivan, 2006; Ball & Cohen, 1996). In this negotiating of content providers also have to consider the issue of depth versus breadth, which always troubles decisions about the content of PE-PD programmes (both pre- and in-service). Covering more does not always allow teachers to "refine their delivery of one curriculum [initiative] before we moved on to a new curricular approach" (O'Sullivan & Deglau, 2006, p. 442), which limits the teachers' ability to apply their knowledge in practice. Content development for PD programmes appears to be a constant act of balancing the wants of teachers, the goals of the PD, understandings about effective teacher learning and change, and the limitations of time available for the PD. Given the complex and varied school and teacher needs that PD programmes are required to support, it is important that the research undertaken in this study assists designers of PD to make informed choices about the contents of programmes for teachers in primary schools.

### ***Adequate Resourcing and Support***

High-quality, effective PD experiences are contingent on funding (Coburn, 2003; Garet, et al., 2001), supportive administration (Richardson, 2003), Principals, colleagues and students (Bechtel & O'Sullivan, 2007; Guskey, 2003). Lieberman (1995) and O'Sullivan and Deglau (2006) suggest that as the focus of PD encompasses ideas of student-centred pedagogical strategies and opportunities for teacher learning in the school context, schools are challenged to rethink and provide supportive, meaningful and sustained structures for teacher learning to occur. In considering the resourcing and support for PE-PD, the research suggests that school leaders and designers of PD need to consider issues of funding, opportunities, support networks and the physical resources used. These are discussed in more detail below.

### ***Funding for Professional Development***

For PD to be effective and provide opportunities for teachers to embed change into their practice, significant funding needs to be set aside (Coburn, 2003; Darling-Hammond & McLaughlin, 1995; Garet et al., 2001). In order to achieve "below-the-surface differences in pedagogy"

(Spillane & Jennings, 1997, p. 453) and shifts beyond rhetoric (Sparkes, 1987) PD programmes and the schools/teachers involved need opportunities to engage in intensive, ongoing PD that also has the provision for follow-up support. Such versions of PD require more than the typical: the influx of resources, supported by external providers of PD for short periods of time, before they move off the next site. Bechtel and O'Sullivan (2007) argued that government practices, policies and educational priorities needed to account for more than a transmission model of PD, and instead provide sustained funding for PD.

### ***Balanced Access to Opportunities***

A challenge for teachers working in primary schools appears to be the expectation that they engage in PD to support their teaching of the numerous subjects they teach. Teachers in New Zealand primary schools are consistently bombarded with PD opportunities across all curriculum areas, and in relation to other initiatives, such as numeracy, ICT, student wellbeing and assessment for learning. Involvement in many PD programmes at once inhibits the potential for teacher learning, limits the chance of sustainable change (Timperley, Wilson, Barrar, & Fung, 2007; Wylie, 2007) and challenges teachers to prioritise about which PD programme they are going to invest their time and energy in. Involvement in one, let alone multiple, PD programmes, also adds pressure on primary schools to fund teacher release (Armour & Duncombe, 2004) for multiple workshops without disrupting pupils' learning.

### ***A Culture of Support***

The importance of Principal support and a school culture that encourages teacher change has been highlighted in PE literature (Bechtel & O'Sullivan, 2007; Faucette, 1987). Researchers in primary schools exploring specialist PE teachers as they trialled a new curriculum model, highlight that teachers were more likely to be motivated and engaged in PD when they perceived that their Principals were partners in the change process (Faucette & Graham, 1986; Pope & O'Sullivan, 1998), and when teachers felt that the school culture valued teacher learning and experimentation with new ideas (Rovegno & Bandhauer, 1997).

### ***'Real World' Resources***

PD is problematic, maybe even futile, when the resources used are abstracted from the realities of schools (Armour & Yelling, 2004;

McCaughtry, Martin, Kulinna, & Cothran, 2006). For example: A teacher attends a PD session where the focus is on pedagogical strategies including student-centred approaches. The example activities and approaches modelled in the PD allow everyone access to a piece of PE equipment. However, when a teacher attempts to replicate this in their own school they only have enough equipment for a quarter of the class. Their ability to use the student-centred approaches advocated in the PD is hampered. The lack of the physical resources when teachers return from PD to their own school, appears to limit teachers' ability to implement the changes. Therefore PD providers need to recognise concerns teachers may have about resources and identify ways in which to support teachers to apply new learning in flexible ways regardless of the spaces and resources available in their school context (McCaughtry, et al., 2006).

### **EVALUATING PROFESSIONAL DEVELOPMENT**

The review of relevant literature has revealed a number of factors that make for effective PD. However, evaluating the effectiveness of a PD programme requires research that investigates links between teacher learning, teaching behaviour, and student learning and achievement (Ball and Cohen, 1996) through examination of classroom practices (Holland, 2005). Criteria for evaluating the success of PD should be closely linked to measurable changes in:

- teachers' understandings and beliefs about teaching and learning in PE;
- teachers' practice. The way they present content to students; student learning and achievement.

Measuring changes in teachers' knowledge, beliefs and practice, or student achievement is a challenge to anyone evaluating PD. It is difficult to quantify PD impacts. Researchers have relied on data from mainly qualitative methods such as interviews, self-report questionnaires, document analysis and observation. As yet there appears to be little research in PE that links teacher PD with student achievement (O'Sullivan & Deglau, 2006; Tsangaridou, 2006). Researchers should consider the evaluation as an ongoing process that explores change over time from the earliest stages of the planning process to beyond the end of the programme (Holland, 2005; O'Sullivan & Deglau, 2006).

## **A SUMMARY OF THE LITERATURE ON PROFESSIONAL DEVELOPMENT**

Since few research efforts have attempted to systematically account for the processes and effectiveness of PD in PE (Ward & Doutis, 1999) little is known about how teachers interpret and represent knowledge ‘gained’ in PD workshops in their teaching practices (Ko, Wallhead, & Ward, 2006; Bechtel & O’Sullivan, 2006). Also, little is known about how successful PD programmes are at producing sustained change in teacher practices and improvement in student achievement (Armour & Yelling, 2004). This study will provide additional insight into effective PE-PD for primary classroom teachers, whilst also highlighting how primary generalist teachers make sense of and enact knowledge gained from their limited PE-PD opportunities.

## **TEACHER KNOWLEDGES**

It can be seen from the above review of research on PD that teachers face a daunting, ongoing task of learning a great deal about the changing nature of their job. In the last two decades there has been growing research activity over the knowledges teachers need to learn to become effective practitioners. It is now recognised that teachers need much more than knowledge of their subjects. However, there is debate surrounding the conceptualisation of teachers’ knowledge, and what forms of teachers’ knowledge are required. What constitutes knowledge is dependent on underlying epistemological assumptions, making the task of defining what is meant by teacher knowledge complex, and dependent on context and individual interpretation (Borko & Putman, 1996; Calderhead, 1996; Carter, 1990; Jackson, 1986; Munby, Russell, & Martin, 2001; Tom & Valli, 1990; Tsangaridou, 2006). Feiman-Nemser and Remillard (1996) highlight the knowledge base for teaching is “inevitably incomplete and changing, it takes various forms and comes from diverse sources, and it can be structured in different ways” (p. 72). Some researchers have endeavoured to codify the knowledge base required by a teacher, but it is acknowledged that while categories or domains of knowledge can be distinguished in theory they are much harder to identify in practice, as the boundaries between them become blurred (Carter, 1990; Grossman & Schoenfeld, 2005; Marks, 1990). This blurring occurs as teachers weave together different kinds of knowledge

while making decisions about what to do in particular classroom situations (McDiarmid, 1989), in order to be able to present subject matter in a way that makes it comprehensible to the learner.

However, there have been notable attempts to categorise the various knowledges that teachers need to possess. While it is accepted that these knowledges interact, it seems important to identify each as these form a necessary basis for teacher education interventions in PD. Extrapolating out various categories of knowledge allows teacher educators to investigate alternative ways of thinking about teaching and learning, and the PD they provide. Endeavours to understand what teachers know and how they acquire knowledge have resulted in multiple perspectives, categories, classifications and/or typologies of knowledge including the work of Elbaz (1983), Leinhardt (1985), Rovegno (2003) and Shulman (1987a).

Perhaps the best known and most influential is that of Shulman (1986/1987a). Shulman (1987a) presented a comprehensive account of categories of knowledge, including the need for teachers to demonstrate knowledge of:

- content, or subject matter content;
- curriculum;
- general pedagogies;
- subject specific pedagogies, termed as pedagogical content knowledge;
- learners and learning;
- educational contexts; and
- educational ends and purposes.

The categories of knowledge are encapsulated by the term pedagogy, broadly used. As Tinning (2008) outlines there are a myriad of ways in which pedagogy can be defined. However, for the purposes of this study the term pedagogy is used to recognise “any conscious activity by one person designed to enhance learning in another” (Mortimore, 1999, p. 3). Therefore a teacher’s pedagogy includes such things as, but is not limited to, beliefs about learners and learning, strategies used to facilitate learning in the classroom, understandings of context, and knowledge of the subject(s) they teach.

Shulman (1987a) makes a case for further studies in the field of teacher knowledges to understand the education of teachers and how they use knowledges to reason and engage effectively in teaching. Be it pre- or in-service, teacher educators could then be better positioned to educate in light of that understanding. This is supported by Rovegno (2003) who suggested that

*in the same way that knowledge of how children learn and develop informs teachers, understanding how teachers learn and develop helps teacher educators and staff developers design programs that are more effective and improve professional development (p. 295).*

Elbaz (1983) suggested teachers required practical knowledge, knowledge of self, knowledge of the milieu of teaching, knowledge of subject matter, knowledge of curriculum, and knowledge of instruction. Leinhardt and Smith (1985) narrowed teacher knowledge to two areas, subject matter and lesson structure. Grossman (1990) elaborated on Shulman's work, by exploring the place of knowledge of self and re-conceiving content knowledge to represent both subject matter knowledge and pedagogical content knowledge. However, as Graber (2001) argues, teachers also hold strong views about what constitutes effective teaching, grounded in their own experiences (craft knowledge) that are no less valid.

It is now recognised that there is interaction between different knowledges and there is a danger in neglecting the interplay and multifaceted way in which teachers integrate their knowledge in order to produce meaningful and effective learning opportunities for their students. Grossman (1995) emphasises that the domains of knowledge may be represented as discrete in theory, but in practice teachers must "integrate [these] multiple knowledge domains [categories] in constantly shifting circumstances" (p. 882). However complex, a multifaceted perspective on teacher knowledge provides a heuristic that assists in understanding teachers, teaching, and learning (Borko & Putman, 1996) and forms the basis for the investigations into teacher knowledges in this thesis.

Researchers recognise that the nature of primary school teaching, with the need to teach in numerous subjects, makes the application of Shulman's concept of knowledge categories more complex but no less applicable (Appleton, 2003; Poulson, 2001; Shulman, 1987a). However, Grossman, Wilson and Shulman (1989) and Poulson (2001) argue that

further studies are required to explore how the knowledge categories play out for the primary teachers preparing to teach seven or eight subjects, given the different demands these teachers face in comparison to their specialist colleagues who are preparing to teach just one subject.

This study explores the primary school context where teachers are expected to teach across numerous subjects. It seeks to understand the complexity of knowledge acquisition and enactment, for teachers as they grapple with new information from a PD contract. Of central importance to this study is how the PD impacted on teachers' general pedagogical knowledge, subject matter knowledge and pedagogical content knowledge. While recognising that knowledge of context (including knowledge of learners and community) is equally relevant, it is not specifically addressed as a focus in this study. In the following sections, several knowledges are reviewed, focusing teaching in primary schools and teaching PE in particular.

### **GENERAL PEDAGOGICAL KNOWLEDGE**

Shulman's general pedagogical knowledge refers to the broader principles, strategies, tactics and routines that teachers use in their classroom practice to facilitate and manage learning and the learning environment (Calderhead, 1996; Grossman, 1995; Shulman, 1987a; Shulman, 1986). General pedagogical knowledge transcends subjects, and includes knowledge about lesson structure, classroom organisation and management, instructional strategies, learning and assessment, and also encompasses knowledge and beliefs about learners and how learning occurs (Borko & Putman, 1996). Researchers suggest that effective teachers use a range of strategies and skills to promote student learning (Alton-Lee, 2003; Graber, 2001; Tsangaridou, 2006) including establishing expectations, routines and classroom rules, providing clear instructions, giving comprehensible explanations and demonstrations and providing feedback.

The PE research agenda in the late 1970s and early 1980s primarily focused on effective instruction by specialist PE teachers' behaviour and impacts on student learning (Graber, 2001; Rossi & Cassidy, 1999). The works of Rink and colleagues (1993, 1998, 2006; 1985; 2008), Silverman and Ennis (1996, 2003), Siedentop and colleagues (1983, 1991; 1984; 1986; 2000), Mosston (1966; 1972) and later with Ashworth (1986),

Metzler (1990, 2000), Tinning (1987) and Graham (2001), have been seminal in building our understandings of strategies specific to teaching and learning PE. Based primarily on analyses of how changes in the teaching process impact on student achievement in PE classes (process-product research) these studies helped determine what appeared to constitute the general pedagogical knowledge required to teach PE effectively. This included concepts relating to understandings of academic learning time – PE (ALT-PE), a spectrum of teaching styles, inclusive PE, and principles for managing learners who are engaged in movement activities. This research is based on a technocratic notion of teaching, focused on changing teachers' behaviours in order to improve their teaching of movement skills. Although these studies have become the cornerstones for understanding what pedagogical strategies are necessary for managing the PE learning environment, there has been little analytical work that explores how generalist teachers make use of these strategies alongside those developed in and for the classroom.

The exception appears to be a study by Hickson and Fishburne (2004, 2005) who worked with three generalist teachers during a five and a half hour PD programme. They found that a focus on effective teaching strategies, without a relook at content not only increased students' engagement in activity learning time, but also supported one of the teachers to feel more confident about her teaching of PE. While only a small sample this study suggested that providing generalist teachers with opportunities to explore general pedagogical knowledge and skills and not just content knowledge, PD programmes assisted them to feel more motivated to teach PE. However, Siedentop (1989) cautions teacher educators to maintain a balance in the way they design pre-service programmes, as "we prepare teachers who are more pedagogically skilful than ever, but who in many cases are so unprepared in the content area that they are ill-equipped to teach anything beyond the beginning unit of an activity" (p. 9). Thus, having sound general pedagogical knowledge and skills alone is not enough to ensure effective learning in PE education.

An additional, and yet unstudied, matter in New Zealand primary schools is how the general pedagogical approaches emphasised in *Assessment for Learning* (AFoL) PD are translated into classroom teachers' PE programmes. As a central and on-going focus of PD in many New Zealand

primary schools AFoL pedagogical approaches,<sup>2</sup> such as learning intentions, success criteria, guided questioning, and feedback/feedforward have become the language of the classroom. Although this PD has been running throughout New Zealand for over five years, little is known about how classroom teachers are utilising this pedagogical knowledge in their PE programmes and practices.

## **SUBJECT MATTER KNOWLEDGE**

Shulman also identified content (or subject matter content) knowledge as essential for teachers. Subject matter knowledge has been articulated in range of ways, and can include: knowledge of content, syntactic and substantive structures (Cochran & Jones, 1998; Gess-Newsome & Lederman, 1999; Grossman et al., 1989), the nature and characteristics of the subject, subject content knowledge, curriculum knowledge, and pedagogical content knowledge [PCK] (Jones & Moreland, 2003; Rowland, 1996; Shulman, 1986). Borko and Putman (1996) emphasise that adoption of a particular model for understanding subject matter knowledge is not important. However, they suggest that it is necessary to acknowledge

*that teachers need to know more than just the facts, terms and concepts of the discipline. Their knowledge of the organising ideas, connections among ideas, ways of thinking and arguing, and knowledge growth in the discipline is an important factor in how they will teach the subject (p. 676).*

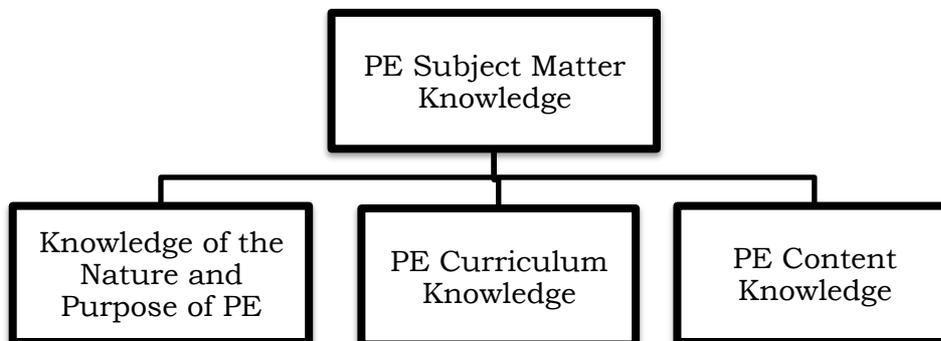
As Shulman (1986) highlighted, “to think properly about content knowledge requires going beyond knowledge of facts or concepts of a domain” (p.9). While the term content knowledge can be understood as knowledge of the facts, concepts, principles and skills associated with the discipline (Chen & Ennis, 1995), the term subject matter knowledge refers to an understanding of more than just the content knowledge of a subject, but also to a broader understanding of a subject’s nature, form, and organisation (Grossman et al., 1989). Consequently, and for the purposes of this study the term subject matter knowledge is used to capture the breadth of knowledge about a subject required for teaching (see Figure 1). While Shulman (1986) recognises PCK as part of subject

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<sup>2</sup> See the work of Black, colleagues (2004), and Black & Wiliam (1998) and *Unlocking formative assessment: practical strategies for enhancing students' learning in the primary and intermediate classroom* (Clarke, Timperley, & Hattie, 2003) for more details on these strategies.

matter knowledge, for the purposes of this study it is identified as a separate knowledge domain. This will be discussed in more detail in later sections.

Figure 1: Model to identify subject matter knowledge



Several scholars have reported that understanding PE subject matter knowledge is difficult for teachers, made worse by the ill-defined nature of the subject (Siedentop, 2002, 2007; Tinning, 2002). Internationally there continues to be ongoing disparity between the purpose and the content of PE at all levels of the education sector. While it is not in the scope of this literature review, or study, to answer the broader issue of defining the nature, purpose, curriculum or content of PE, it is important to explore the research literature on the role that subject matter knowledge plays for the effectiveness of teaching and learning in PE. This is outlined below.

### ***Knowledge of the Nature and Purpose of Physical Education***

How teachers understand the nature, purpose and characteristics of a subject, such as PE, will impact on what they see as the content of the subject and therefore what they recognise as important subject matter content to be taught and learned (Grossman, 1995; Jones & Moreland, 2003). According to Calderhead (1996) and Borko (2004) teachers require a rich and flexible knowledge of the subject content area(s) they teach, in order to foster students' conceptual understanding.

A number of debates relating to the changing nature and purpose of PE are evident in the PE literature (for example Almond, 1989, 2000; Estes, 2003; Kirk, 1992; McNamee, 2005; Penney, 1998; Siedentop, 2002; Tinning, Kirk, & Evans, 1993; Tinning, Macdonald, Wright, & Hickey, 2001; Tinning & McCuaig, 2006). Few New Zealand studies were located

(Culpan, 1996/97, 2000; Ross, 2001, 2004; Stothart, 1974; Wills, 1972). Given the ill-defined nature of PE, a lot of the research cited in this literature review assumes physical skills as the major subject content for PE. This is in contrast to the 1999 New Zealand HPE curriculum that proposed that learning in PE focus on broader objectives, such as developing students' ability to relate to others, and contribute to creating healthy communities.

There is little known about primary teachers' knowledge of the nature and purpose of PE. Previous experiences have a "distinct and traceable influence on an individual's future decisions, practices, and ideologies as a teacher" (Schempp & Graber, 1992, p. 333) and are likely to be highly important in the way primary teachers develop knowledge about the nature and purpose of PE. It has been reported that many generalist primary teachers have negative attitudes towards PE because of their own student experiences of PE and sport in schools (Howarth, 1987; Morgan & Bourke, 2005; Morgan, Bourke, & Thompson, 2001; Portman, 1996). This raises the concern that these teachers may rely on these negative experiences to guide their teaching and decision-making in PE unless initial teacher education (ITE) programmes can change them. ITE experiences provide generalist teachers with many personal experiences and episodically stored ideas about PE, which are foundational to the development of their beliefs about both themselves and about the subject of PE. One indication of how these experiences translate into teachers' knowledge of the nature and purpose of PE is to examine practising primary teachers' perceptions of the learning priorities for PE. Currently only anecdotal accounts inform perspectives of what teachers in New Zealand primary schools understand as the nature and purposes of PE.

### ***Curriculum Knowledge***

It has been demonstrated that the curriculum knowledge teachers require is multi-faceted, and includes understandings of curriculum as policy, school programmes, classroom practices or the enacted or taught curriculum (Cuban, 1992; McGee, 1997; Pinar, Reynolds, Slattery, & Taubman, 2004). In addition, teachers may require knowledge of subject specific curriculum models, for example *Teaching Games for Understanding* (TGfU), or *Sport Education*. As highlighted in the introduction, there has been limited research investigating teachers' knowledge and practices in PE curriculum before or since the

introduction of the 1999 HPE curriculum. This is an area that will be explored further in this thesis.

### ***Subject Content Knowledge***

Shulman (1986), used the term subject content knowledge to incorporate knowledge of subject matter, curriculum content and PCK. However for the purposes of this study the term subject content knowledge is used to describe knowledge of the PE subject content to be taught and learned in the context of PE, the factual information, knowledge, skills, central concepts, and dispositions to be learnt by the students (Cochran & Jones, 1998; Grossman, 1990; Grossman et al., 1989; Shulman, 1987a).

Research has highlighted that teachers' knowledge of content affects what teachers' choose to teach, how they teach it, their style of instruction (Borko & Putman, 1996; Grossman et al., 1989), how they present the subject to their students (Grossman, 1995), and how they select material to teach, including their ability to critique texts and other teaching materials (Grossman et al., 1989; McDiarmid, 1989). Teachers' content knowledge appears to influence their ability to construct activities, explanations and questions for students, and assess student understanding (Carlsen, 1991; Leinhardt & Smith, 1985; McDiarmid, 1989). McNamara (1991) indicates that with only limited knowledge of a PE content, teachers are more likely to adopt a didactic approach which avoids pupil participation and questioning and which fails to draw on children's experiences. Teachers are likely to de-emphasise or avoid teaching areas in which they have less content knowledge, while over emphasising areas where they feel they have content expertise (Carlsen, 1991; McNamara, 1991; Smith & Neale, 1991). This lack of content knowledge also reduces teachers' confidence and motivation to teach PE (Faucette, et al, 2002; Morgan & Bourke, 2004). In line with anecdotal accounts from advisers working in New Zealand schools, studies have found that this lack of PE content knowledge among primary school generalist teachers contributed to uncertainty about what they were doing (DeCorby, Halas, Dixon, Wintrup, & Janzen, 2005; Hart, 2005; Morgan & Bourke, 2004), whereas teachers who demonstrated a good knowledge of PE, good skills, and a readiness to participate were more likely to encourage a positive student engagement in PE (Capel, 2007; Ryan, Fleming, & Maina, 2003).

It is widely agreed that all teachers require appropriate PE content knowledge to effectively present tasks and develop content effectively to promote student learning (Romar, 1995; Werner & Rink, 1989). It is also agreed that generalist teachers need to have strong practical knowledge of the range of activities in a typical PE programme (Tinning, 1992), which currently in New Zealand would mean understanding activities such as gymnastics, athletics, swimming, and winter and summer sports (Petrie, 2008). Ward (2009) indicates that this practical knowledge of sports/activities needs to extend to understandings of the rules/etiquette, techniques, strategies of each activity. Practical PE knowledge is not enough, for classroom teachers also need to have the theoretical knowledge of movement concepts to be able to detect student errors and develop appropriate tasks and progressions to support student learning in each activity or sport (Griffin, Dodds, & Rovegno, 1996; Rovegno, 2003; Tinning, 1992; Ward, 2009).

With the introduction of *Health and Physical Education in the New Zealand Curriculum* (Ministry of Education, 1999), classroom teachers were challenged to know more PE subject content. While previous New Zealand PE curriculum and supplementary documents designed for primary schools (Department of Education, 1953, 1955, 1964, 1966, 1987) had outlined content areas such as aquatics, movement and dance, fitness, and Te Reo Kori, the 1999 HPE curriculum identified broader key learning areas, without specifying topics for teachers. Since 1999 content knowledge could not solely relate to concepts of personal health, movement concepts and motor skills. Teachers were expected to have sophisticated content knowledge that would allow them to design learning experiences associated with relating well to others, creating healthy communities (among others), while still using movement as the medium through which to explore these. Thus a major PE curriculum issue had emerged, one with major implications for PD and teacher effectiveness.

The descriptive nature of the key learning areas, achievement objectives and learning outcomes, and the lack of specified content areas identified in the curriculum have probably added confusion for teachers who had difficulty understanding the existing content of PE. Although there have been studies on how teachers have implemented the curriculum (as discussed in the earlier section on curriculum knowledge) little is known

about how primary teachers view the content of PE in light of the 1999 HPE curriculum, or how their knowledge of PE content impacts on their teaching of PE.

In defence of primary school teachers it is important to recognise that as generalist teachers they face a challenging task to have well-developed knowledge in every specific subject. Pre-service programmes that have reduced the hours for subject specialisation in primary teacher education (Poulson, 2001) do not help this. Siedentop (2000, 2002, 2007) has repeatedly expressed concern about the limitations of initial teacher education and PD programmes that do little to help teachers acquire and refine strong practical content knowledge (Ward, 2009). These concerns have also been expressed in recent initial teacher education meetings throughout New Zealand, as hours in primary teacher education courses continue to be reduced. Research is needed in both pre- and in-service programmes to explore how PE content knowledge is developed and what contextual factors impact on teacher opportunities to grow this form of knowledge. This study seeks to explore how a PD programme for in-service primary school teachers contributes to teachers' PE content knowledge development.

### **PEDAGOGICAL CONTENT KNOWLEDGE**

As used by Shulman (1987a), the term PCK has served as an important catalyst for the approach researchers take when considering teachers' thinking about what and how they teach specific subjects and content areas. PCK is domain-specific knowledge that relates to what teachers know about subject matter, and how they translate this knowledge into classroom practices that enhance student learning (Borko & Putman, 1996; Carter, 1990; Doyle, Shulman, Jackson, & Cuban, 2004; Grossman, 1995; Marks, 1990; Munby et al., 2001; Shulman, 1987a). As Dewey (1902/1956) suggests "every study of subject has two aspects: one for the scientist as scientist: the other for the teacher as teacher. These two aspects are in no sense opposed or conflicting. But neither are they immediately identical" (p. 285-286). What differentiates the content specialist from the teacher/pedagogue is their knowledge of content for teaching, their PCK.

In curriculum literature it is recognised that being a subject content expert is not enough to be an effective teacher. Cochran, DeRuiter, &

Smith (1993) highlight, that “PCK differentiates expert teachers in a subject area from subject area experts” (p. 263). PCK distinguishes the expert in sports and physical activity from the expert teacher of physical education (Tsangaridou, 2006), “the content specialist from that of the pedagogue” (Shulman, 1987a, p.8). An individual can have expert subject matter knowledge (what they know about what they teach) without being an expert teacher of that subject matter, as they lack the PCK to represent, formulate, and transform the subject content into comprehensible and meaningful learning experiences for their students. In PE the term PCK helps to distinguish between the teachers’ own proficiency in a skill (e.g. being able to hit a hockey ball) from knowledge needed to be able effectively teach others to hit a ball with the same level of proficiency. Teachers with PCK are able to package everything they understand about PE curriculum and content, their students, and pedagogical strategies, and from this create multiple examples and representations of the PE topics that make the content accessible to the diverse interests and abilities of learners (Griffin et al., 1996; Grossman & Schoenfeld, 2005; Shulman, 1987a).

Although PCK can be viewed as a distinct form of knowledge (Grossman, 1990), for the purposes of this study PCK is viewed as an integrative form of understanding that combines: subject matter knowledge, including curricular and content; pedagogical knowledge, including knowledge of learners and learning; with knowledge of context (Borko & Putman, 1996; Gess-Newsome, 1999a). This appears to be more aligned with the complex nature of generalist teachers’ work, as they consistently work towards creating meaningful learning opportunities for students across a range of subjects. It does not seem feasible that primary school teachers will have had opportunities to develop a distinct form of knowledge that is specific to teaching all aspects of particular subjects, or subject topics like gymnastics-PCK. However, it is necessary to explore what is known about the relationship between PCK and PE practices.

### ***Pedagogical Content Knowledge and Physical Education***

Since the early 1990s some PE researchers have studied how PE teachers acquire and use PCK in their classroom practices (Amade-Escot, 2000; Graber, 2001; Rovegno, 2003; Tsangaridou, 2006). These studies have predominantly been case study in design, using observations, interviews, document analysis (at times) and involving small samples of

teachers. With the exception of studies by Tsangaridou (2002), Rovegno (2003), Schempp, Manross, Tan, & Fincher (1998) and McCaughtry (2004), research has predominantly focused on how pre-service PETE students develop PCK as they attempt to make sense of teaching a specific activity (be it sport or curriculum model) in middle and high school settings. While all are focused on specialist PE teachers, they provide some useful insights into the important role PE pedagogical content knowledge (PE-PCK) has for teaching and learning in PE.

Findings from across these studies highlighted that:

- “Subject matter matters” (Rovegno, 1995, p. 6). Understanding of subject matter was essential to development and use of PCK (Chen, 2004; Graber, 1995; Sebren, 1995);
- When student teachers had limited PCK they initially blamed students for poor performance, even though it was teacher predictions of skilfulness that resulted in mismatching of activity design to student ability. (McCaughtry & Rovegno, 2003);
- Student teachers struggled to read and give appropriate suggestions and feedback to children’s movement responses during actual lessons, especially when their students have limited or inappropriate movement responses (Chen, 2004; Rovegno, 1993a; Sebren, 1995);
- Student teachers with inadequate PE-PCK had difficulty constructing developmentally appropriate progressions, explanations and tasks that match the learners’ needs (Graber, 1995; Rovegno, 1993a, 1994, 1998);
- PCK was highly domain specific, that teachers will require PCK for tennis, line-dancing PCK, basketball PCK (Griffin et al., 1996; Rovegno, 2003);
- PCK was highly context-specific, located in the relations among the individual, the activity of teaching and the school culture (Griffin et al., 1996; Rovegno, 1994; Ward, 2009);
- To develop PCK teachers needed to be willing to examine their instructional techniques and make substantial changes over time (Griffin et al., 1996). However, Sheburn (1995) suggests that advanced knowledge acquisition in other areas of the knowledge base may precede the development of PCK.

Extending the investigations into student teachers' enactment of PCK, Schempp, Manross, Tan, & Fincher (1998) and Rovegno (2003), through observations and interviews, found that experienced teachers with expertise (in the particular sport under investigation) were better positioned to recognise problems in student learning and provide specific remedies and feedback. These teachers also provided more detail in planning and organising subject matter, were able to accommodate a range of learners' skills and abilities in flexible ways in and across lessons, and were comfortable with and enthusiastic about teaching PE. Both studies concluded that, in line with studies of student teachers, experienced teachers and their students benefitted when subject matter knowledge improved.

Students' emotions emerged as an important area in some research. McCaughtry's (2004) study of one female middle school PE teacher found that this teacher's interpretations of student emotions influenced her: selection, ordering and formulating of curriculum units; pedagogical manoeuvring during lessons to facilitate learning; and interactions with students (individual or groups). It suggests that there is a need to expand conceptions of PCK to include the emotional dimension, where teachers recognise the important role that student emotion plays as teachers make decisions about curriculum, content and pedagogical approaches (McCaughtry, 2004; McCaughtry & Rovegno, 2003).

A significant gap in the PE research is explorations into how practising classroom primary teachers develop and enact PE-specific PCK in their PE lessons while addressing the complexity of teaching numerous subjects. A study by Tsangaridou (2002) is the only one located that explored how generalist classroom teachers (albeit pre-service) enact PCK. An exploratory case study of one pre-service primary classroom teacher involved in a compulsory course on teaching primary PE, found that the student teacher's view on how best to enhance student learning and her understanding of subject matter influenced her PCK. In turn it positively influenced her content decisions, actions and practices. The right balance of content and pedagogical strategies in the methods course appeared to have enabled the pre-service teacher to use student-centred pedagogical strategies such as questioning, and partner and group activities, supported by clear examples, demonstrations and adequate practice time.

While these five studies (McCaughtry, 2004; McCaughtry & Rovegno, 2003; Rovegno, 2003; Schempp et al., 1998; Tsangaridou, 2002) are based in primary schools, what is missing is an examination of what PCK for teaching PE in-service classroom generalist teachers currently receive, and the impacts PD can have on the development of PCK for these same teachers.

### **A SUMMARY OF LITERATURE ON TEACHER KNOWLEDGE**

In summary, studies in teacher knowledge have highlighted the importance of a rich and deep knowledge base for effective teaching, and the limitations of classroom teachers' knowledge to teach PE. There has not been an extended study examining the impacts of PD development on primary teachers' knowledge development and their ability to teach PE effectively. To help fill this gap, this study seeks to provide additional insight into how and under what conditions PD impacts on classroom teachers' knowledge development and what this means for teaching and learning in PE.

### **CHAPTER SUMMARY**

This review has focused on some of the theoretical models used to explain teacher learning, teacher change, and the role of PD in changing teaching practices in PE. From the review of key literature, a number of teacher knowledge domains have been identified and a number of factors that are related to effective PD in PE. Together, these knowledge domains and PD effectiveness factors provide a useful theoretical framework that can be used as a tool to analyse the impacts of a PD programme on teachers' knowledges and practices.

As a consequence of the New Zealand context and the literature review, the main research questions are:

- What knowledges did a sample of primary teachers use to teach PE before participating in Model 2 of the *Physical Activity Initiative* PD programme?
- What were the impacts of Model 2 of the *Physical Activity Initiative* PD programme on these teachers' knowledges for teaching PE?

## **CHAPTER THREE – METHODOLOGY**

Building on the literature outlined in Chapter Two, this chapter details the theoretical positioning of the research and the methods used to conduct the research (Wolcott, 1992). First, the chapter presents justification for the interpretive framework that was selected to underpin the research. Second, the methods and procedures utilised in the data collection process are described, along with the strengths and limitations of the variety of data collection procedures. Ethical considerations made throughout the study are discussed, data analysis processes are described, and the advantages and disadvantages of these processes are outlined.

### **AN INTERPRETIVE FRAMEWORK**

*We must grasp, understand, and interpret correctly the perspectives and experiences of those persons who are served by applied programmes if we are to create solid and effective programmes (Denzin, 2001, p.3).*

This study seeks to describe, understand and interpret teachers' experiences and the impacts of a PD programme on teacher knowledges in PE. In order to explore the varied experiences and impacts an interpretive framework has been adopted to guide the actions in the research, an approach advocated by Denzin (2001) for this kind of research. In contrast to 'positivism' where the purpose is to measure and predict in a 'scientific' manner, an interpretive perspective places the focus on understanding and making sense of the multiple realities, experiences and views of participants as they are embedded in and evolved from social, cultural and historical contexts (Crotty, 1998; Ellis & Flaherty, 1992; Guba, 1990). Therefore, interpretive researchers look for culturally derived and historically situated interpretations of the social world.

The diverse, complex and unique context in which the research is grounded is acknowledged and explored, as the researcher and the participants interact and shape one another's understandings (Denzin & Lincoln, 2005a; Pope, 2006). The understandings that develop as a result of the research process are viewed not as being objective, but as subjective "interpretations socially situated in the worlds of – and

between - the observer and the observed” (Denzin & Lincoln, 2005a, p.21). Bryman (2001) refers to this as a “double interpretation” (p. 15), with the researcher providing an interpretation of others’ interpretations. This study goes beyond double interpretation. There were multiple layers of reading the perspectives of others (teachers, PD providers, students) and the sociocultural contexts in which they interacted.

As applied to this interpretive study, knowledge is seen as an outcome or consequence of human activity, where teachers’ knowledge of PE is constructed in relation to broader social contexts and the interactions of these teachers in a social world. This means that all knowledge is essentially subjective, problematic and continually changing, and therefore it can “never be certifiable as ultimately true” (Sparkes, 1992, p. 26).

This strong element of human construction means that multiple realities exist in any given social context; that the generalist teacher may have multiple understandings of physical education. An interpretive research framework allows for the development of detailed, descriptive accounts of PE in the primary school and sheds light on how these multiple understandings (realities) of PE are constructed by generalist teachers and the researcher (Cochran-Smith & Lytle, 1990; Pope, 2006), and how these understandings are played out in classroom practices.

The task of an interpretive researcher is to adopt research methods that emphasise deep interpretive understandings of social phenomena from the multiple perspectives of the participants, including the researcher (Pope, 2004). Consequently, qualitative researchers deploy a wide range of interconnected interpretive methods in naturalistic settings, always seeking better ways to make more understandable the worlds of the participants studied (Denzin & Lincoln, 2005a; Patton, 2002) and that they ‘do justice’ to the complexity of the social setting under study (Flick, 2006).

This interpretive study focuses on “studying, understanding, and enhancing teaching and learning across discipline areas... by making the scholarship of teaching public, accessible to critique by others, and exchangeable in the professional community” (Cochran-Smith & Donnell, 2006, p. 506). One of the challenges of this approach and of exploring the nexus of policy, PD and teaching, is to view the whole from both an

inside-out as well as an outside-in perspective, a conceptual tool discussed by Cochran-Smith and Lytle (1993), and Knapp (2002). As they explain, this approach attempts to integrate two perspectives, the macro and the micro, which have dominated (and divided) approaches to research on the topic of improvement in teaching (Darling-Hammond, Hightower, Husbands, LaFors, Young, & Christopher, 2003; Knapp, 2002). An outside-in macro level perspective tracks the policy or reform initiatives and the interactions between these and the context, whilst losing “sight of the way actors [teachers, advisers] at each level of the system interpret and make use of policy events for their own purposes” (Knapp, 2002, p.6). In contrast an inside-out micro level perspective, that focuses on the professional practice of teachers at the “chalk face”, underestimates the impacts that broader context factors have on the way teachers work.

From the outside-in perspective this study traces the implementation of the *Physical Activity Initiative* and the corresponding PD programme in an endeavour to identify the interactions between policies, PD programmes and context both at the school and classroom level. In adopting the inside-out perspective the study investigates teacher learning and traces outward to explore the conditions and multiple demands on teachers engaging in a PD programme and the way they make sense of these demands as they manifested in their comments and practices. By adopting this dual perspective the research offers insights relevant to local contexts as well as broader educational stakeholders involved in the development of policy and PD (Cochran-Smith & Donnell, 2006; Knapp, 2002).

Within the interpretive paradigm, this investigation uses influences from sociocultural theory. As this research endeavours to examine the understandings individuals assign to PE and how these manifest in practice before and after PD, from both the inside-out and outside-in, it is essential that the research questions be examined in light of the broader context of the social world with which teachers interact. Those who support an interpretive paradigm thus believe that it is important that the individual not be studied in isolation from the whole social context in which the learner is situated (Lave, 1996; Lave & Wenger, 1991; Rogoff, 2003; Wertsch, Río, & Alvarez, 1995). Sociocultural perspectives recognise that teacher learning is influenced by prior

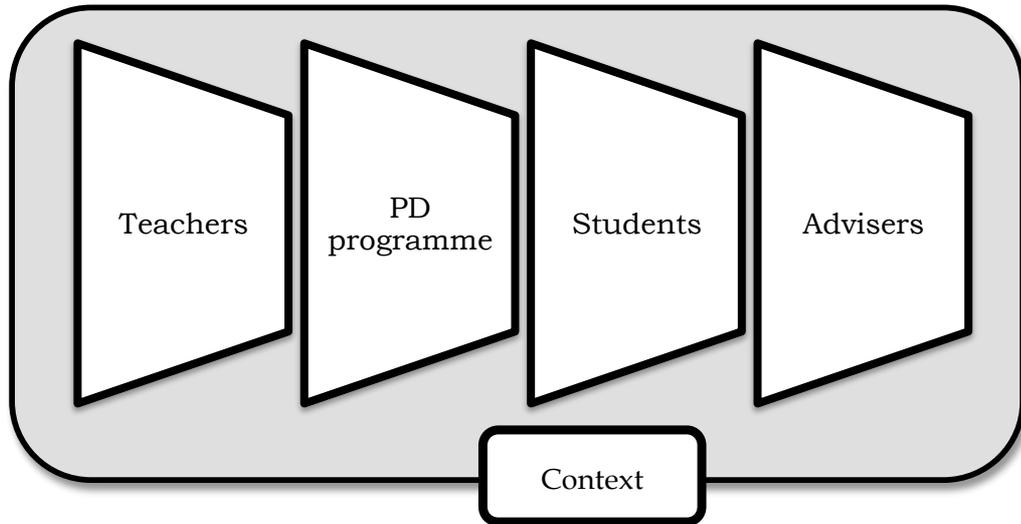
knowledge, the social situations in which teachers learn, the culture in which they participate, and the tasks, cultural tools, artefacts, and resources teachers use to stimulate and support interaction and learning (Deglau & O'Sullivan, 2006; Holland, 2005; Lave & Wenger, 1991). Research participants are thus viewed in the whole context of their lives. Sociocultural perspectives have been adopted in educational research to assist in grasping and interpreting the complexity of teaching and learning in the specific context of primary schools.

In this study, sociocultural perspectives are adopted to make sense of teaching and learning, and acknowledge complexity and the impacts of interactions between people, ideas, tools, and settings over time (Wertsch, 1991; Wertsch, Rio, & Alvarez, 1995). Of particular importance in this research has been a focus on how teachers and PD providers are “agents-acting-with-mediational-means” (Wertsch, Tulviste, & Hagstorm, 1993). This thesis explores the ways in which teachers and PD providers interact with, and their actions are mediated by, material cultural tools (Wertsch, 1998). In this study the mediational means included PD resources in the form of lesson plans, activities and games.

These sociocultural perspectives invites a research programme that challenges the researcher to “explicate the relationships between human action, on the one hand, and the cultural, institutional, and historical situations in which this action occurs, on the other” (Wertsch et al., 1995), and in doing so to seek clarity, at multiple levels, from the obscure. The clarification and analysis process involves the researcher grappling with a focus on a part (or plane) of an activity “without losing track of inherent interdependence in the whole” (Rogoff, 1995). This requires the researcher to keep sight of the parts in the system, while examining the dynamic tensions that exist as the various parts mix (Wertsch, 1998).

In this project the whole activity is made up of parts relating to the actors (teachers, students, and advisers) and the PD programme in which they are engaged. These parts also operate in broader school and community contexts (as seen in Figure 2), which are kept in focus throughout the analysis process.

Figure 2: The parts in the broader social context



Understanding the whole allows the researcher to see the parts more clearly, while at the same time our understanding of the parts allows me to understand the whole more clearly. This requires the researcher to move dialectically between whole and part and ensure that the foci of analysis involve an exploration of the personal, interpersonal and institutional (Rogoff, 2003). Working in this way requires the researcher to analyse the interactions and relationships between all participants and their cultural and institutional environment, both in the moment and over time.

The sociocultural interpretive approach framing this study has been used in an attempt to explore how generalist teachers, and the researcher, constructed and continued to reconstruct their knowledges of PE throughout the PD experience and what this meant for classroom practices (Neuman, 1997; Sparkes, 1992). The study has been designed in ways to allow me to grasp, understand and interpret the complexities of the teachers' context, their work, and their reactions and perspectives on PD associated with PE. Nevertheless, the literature review showed that interpretation could be based on a systemic approach. Theoretical constructs for analysis of data were provided by factors that related to effective PD, and several knowledges that teachers are expected to acquire for teaching PE.

The research design challenged me to recognise the subjective nature of my interpretations, and not mistake my own experiences for the

experience of the teachers (Denzin, 2001). An interpretive approach required me to consider how I recognise, incorporate and represent multiple perspectives (my own, PD providers and the teachers), establish trustworthiness in data generation, analysis and interpretation, use multiple data gathering methods, and address ethical concerns. How these were addressed in this study is discussed later in the chapter.

## **METHODS**

It is important to note that the data collected served the dual purpose of investigating the research questions associated with this study and a Ministry of Education contract undertaken by Petrie, Jones and McKim (2007). To this end the choice and design of methods was strongly influenced by the contractual requirements agreed between the Ministry of Education and the research team from the University of Waikato. There was some flexibility in the contract related to design that allowed for the specific research questions relating to this thesis to be explored. However, the time frames of the contract (less than nine months for data collection), opportunities to access schools, and the pressures and restrictions associated with taking teachers away from their classes to be involved in the research process limited some opportunities to extend the data. Despite the difficulties associated with gathering data for the dual research agendas, involvement in the evaluative research contract provided opportunities to access a wide range of participants across a variety of settings. In addition, the research consultation team employed to support the design and implementation of the research contract, assisted in the development and refinement of the methods used for data collection. This is discussed in more detail in the following sections.

## **PARTICIPANTS**

In order to explore primary teachers' knowledges and practices associated with PE and the impacts of PD on teachers' knowledges and practice, it was necessary that primary teachers themselves be the key research participants in this study. However, to get a broader picture of teacher knowledges and practices, it was important to access a wider range of participants, including the students of these teachers and the advisers working to deliver the PD.

### ***The Teachers***

Data were collected from twenty-five primary generalist teachers working in ten schools stretching across three regions in New Zealand (details/demographics of the schools are provided in Appendix A). The teachers were accessed through schools involved in the broader evaluative research contract undertaken by Petrie, Jones and McKim (2007). All the teachers participated in PD provided through School Support Services under contract to the Ministry of Education.

All participants taught PE as part of their role as a classroom generalist teacher, with the exception of Jade, who was the teaching Principal and took another teacher's PE lesson. The twenty-five teachers had a wide range of teaching experience (between 2 and 15 or more years). Four teachers had AP/DP responsibilities, and two were beginning teachers. A table outline of the demographics/experiences of each of the twenty-five teachers is in Appendix B. Among the teachers, 48% (12 teachers) remembered having less than 40 hours of PE in their initial teacher education training, with only 12% (3 teachers) feeling confident in thinking that they had had more than 100 hours. All teachers reported having some, though limited, PE-PD opportunities during their time in schools. These included: school-run PD, in the form of staff meetings; involvement in the curriculum implementation contract; courses to improve their personal motor skill development and teaching of motor skills and sports; and courses on running school 'sports' events.

### ***Additional Participants***

Consistent with a sociocultural analysis, in order to explore the process and impacts of the PD on teacher learning it was important to understand the broader context in which the learning was taking place. To generate a richer picture of the PD activities, other participants, including the advisers who were charged with delivering the PD, the students of each of the twenty-five teachers, and the principals in each of the 10 schools, were interviewed and, in the case of the students, observed in lessons.

### **SCHEDULE**

In keeping with the iterative nature of the study, data collection occurred in two phases: first focusing on teachers' understanding and pedagogical practices in PE before the introduction of the PD intervention

(March/April 2006) and second the process of the PD and the impacts of this on teachers' knowledges and practices (November 2006), as detailed in Table 1.

Table 1: Data Collection Schedule

<p><b>March &amp; April 2006</b></p>	<p><b><u>Phase one</u></b>  <b>Focus:</b> Pre-PD understandings of and practices in PE  <b>Procedures:</b> Teacher interviews and Questionnaire One  <b>Supplementary data:</b> Adviser interviews</p>
<p><b>November 2006</b></p>	<p><b><u>Phase two</u></b>  <b>Focus:</b> Content and delivery of PD, and impacts of PD on teacher knowledges of and practices in PE  <b>Procedures:</b> Teacher interviews and Questionnaire Two (including teacher reflection on phase one data).  <b>Supplementary data:</b> Principal, Student and Adviser Interviews, Lesson Observations, and Document Analysis</p>

***Phase One (March/April 2006)***

Phase one was designed to occur prior to the beginning of the whole-school PD programme. This phase was intended to capture teachers' pre-PD understandings of the content and purpose of PD, and explore the pedagogical strategies that they believed they currently used as the basis for their PE lessons. Due to systemic issues associated with the identification of schools to be involved in the PD model under investigation, at a Ministry of Education and PD deliverer level, it was not possible to access all schools prior to their first PD opportunity. Six schools were accessed prior to the beginning of the PD. This phase also involved interviews with teams of advisers working in each area.

***Phase Two (November 2006)***

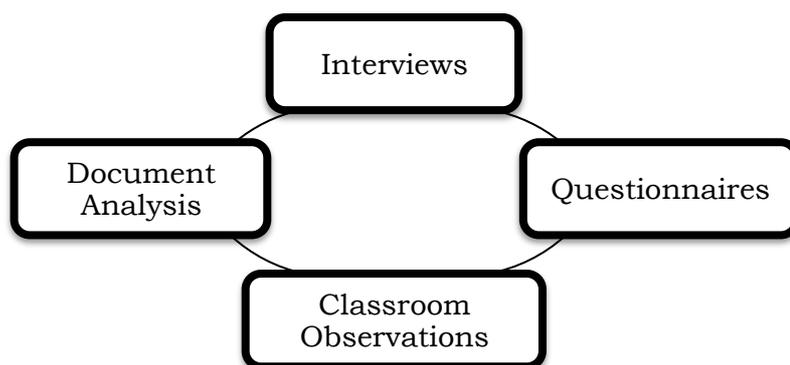
The second visit to each school provided an opportunity to explore how teachers had experienced and responded to the PD programme they had been involved in throughout 2006. During the second visit each teacher was interviewed and observed teaching a PE lesson, although three teachers from one school, Rowland, Fiona and Bernie, were not observed teaching due to inclement weather conditions and the unavailability of any indoor teaching space. These three teachers made the decision not to teach these lessons and it was also not possible to reschedule the observations due to the tight time frames of both the research contract and the school's programme. In addition to the lesson observation,

student focus group interviews were undertaken. The observations occurred before the second teacher interview and the student interviews, thus allowing the researcher to reflect on the lessons with the teacher and students in the interviews.

### **DATA COLLECTION APPROACHES**

To provide an in-depth perspective on teachers' knowledges and practices associated with primary school physical education, both prior and post PD, it was important to employ a combination of methods (see Figure 3), to "explore the connections among professional development activities and processes on the one hand, and individual teachers' knowledge and instructional practices on the other" (Stein, Silver, & Smith, 1998, p. 49). The following sections detail the data generation methods used in this study, and the issues associated with ensuring that the data are trustworthy, valid and ethically sound.

Figure 3: Triangulation of data



#### ***Interviews***

To capture more detail and the richness of each context, in-depth interviews were conducted with the twenty-five teachers from ten different schools, either prior to or early in the PD programme and also as the PD programme was completed. In addition, ten principals from the corresponding schools were interviewed at the completion of the PD programme, during phase two.

In qualitative research, interviewing is viewed as one of the most powerful tools to gain first hand perspectives of an individual or a group (Alvesson & Deetz, 2000; Denzin & Lincoln, 2005a). The primary issue then, is to generate data that give an authentic insight into research participants' sense of meaning, experiences and understanding (Crotty,

1998; Silverman, 2004). The data that were collected in this study cannot be viewed as providing truths about the teachers' knowledges and practices in PE, or the full impacts of a PD programme. But can be read as constructed realities, relative to how the individual participants situate their sense of meaning at that particular time and in the context of the interview situation (Macdonald et al., 2002).

Semi-structured interviews were primarily used in this study. Open-ended semi-structured interviews are thought to be an effective method for determining how people make sense of their own realities (Fontana & Frey, 2000). This approach to interviewing recognises that beliefs, understandings and interpretations are not standardised, and therefore cannot be gathered through formalised closed questioning. Instead an interview guide (see Appendix C) was used, which listed a predetermined set of questions, themes or issues that were explored throughout the duration of the interview. The initial interview guide was generated from the research questions, feedback from the pilot interviews and from a review of the literature.

In addition, background information relating to the teachers' past experiences, gained from the questionnaire (to be discussed in more detail in the following section), provided some starting points that were elaborated on in the interviews. The questionnaire also offered the opportunity to preview with the teachers what would be discussed in the interviews, and stimulated teachers to ask informed questions of me, as the researcher, during the interviews.

While the interview guide provided an outline for questioning, it did not dictate the order or depth or extent to which each theme was addressed. This allowed me as the interviewer to ensure that the interviews remained conversational yet directed. It was essential that the guide was not developed as a series of leading questions but was instead based on introducing, follow-up, probing and interpreting questions (Kvale, 1996). The order of the questions was not determined in advance. The interview guide provided direction to me as the interviewer and allowed for some consistency in the questions that were asked. Therefore, providing more opportunity for consistently obtaining information on the relevant themes from all the participants, while also limiting the directions in which the interviews shifted.

The themes outlined in the interview guide supported the requirements for flexibility and consistency. Flexibility was also supported by adjustments made to the timing, structure and intensity of the interviews, in response to the participants' verbal and non-verbal cues. However, this flexibility and variation in the wording or sequence of questions potentially contributed to responses that differed substantially from one participant to another, therefore reducing comparability. However, the use of the interview schedule reminded me as the interviewer to encourage teachers to discuss any ideas not covered.

### ***Learning How to Listen***

A self-study into the issues associated with my own experiences as an interviewer (Petrie, 2005) and related literature assisted in the design and undertaking of the interviews conducted in this research. I was reminded that, while I hoped to present the research interview as a conversation, it was not always possible to have completely free-flowing dialogue because, in many ways, the interview still had to be focused by the researcher, "on content that is oriented around the research brief" (Radnor, 2001, p.59). However, where possible I endeavoured to create a research relationship drawing from a "participatory mode of consciousness" (Heshusius, 1995, p. 122) in which I was passively alert, vigilant but not intrusive. Such an approach has elements of 'truly listening':

*a way of attending that is characterised, as Schachtel (1959) states, by both 'the totality of the act of interest' and the 'participation of the total person' (p. 225). It involves the temporary eclipse of all egocentric thoughts and strivings, of preoccupation (Heshusius, 1995, p. 122).*

In order to achieve this, it was also essential for me to work on being both present and meta-present during the interviews. This required me to balance the need to be attentive, sensitive and responsive while still maintaining some focus. This challenged my ability to engage in active listening<sup>3</sup>. Active listening requires the interviewer to fully attend to the respondent by giving complete attention to what the respondent is saying, and clearing their minds of preconceptions and other thoughts (Neuman, 1997). In contrast to 'real listening' researchers, parents,

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<sup>3</sup> Also termed as truly listening, fully listening, real listening (Heshusius, 1995; Jordan, 2001; Mohan, McGregor, Strano, & Strano, 1992; Tasker, 1994).

teachers and students may demonstrate selective or passive listening. Researchers may do this by giving the appearance of being attentive, with smiles, head-nods, minimal responses, and listening only to parts of a conversation that interest them, therefore rejecting or ignoring everything else. They may adopt selective listening techniques when they have their own agenda of themes and therefore disregard the alternative contributions that respondents may bring to the interview. I attempted to truly or fully listen, while at the same time maintain a focus on the topic chosen by me.

While it may be possible to give the impression of interest, it is worth reflecting on the possible rarity of achieving real listening in semi-structured interviews. In effect, many interviewers have a set purpose for interviewing, usually the gathering of data for the research project. Therefore, the researcher can become focused on formulating the next question before the person has stopped talking (Tolich & Davidson, 1999), analysing what is being said, or contemplating how they can steer the interview back to where they feel it needs to be heading (Heshusius, 1995), in order to achieve their purpose. In effect, researchers can struggle to clear their heads of the assumptions and data collection task at hand and therefore demonstrate the characteristics of selective listening. This highlights the challenge of the dynamic real-time nature of the oral-aural interviews. How does the researcher see/hear the unexpected while simultaneously maintaining some focus?

By piloting and mentally rehearsing the interviews, I hoped to reduce the need to focus on what I had to cover during the real-time interviews with teachers. This allowed me to focus more on their responses, without having to work so hard on consciously constructing the next question. In addition, in reviewing each interview as soon after the event as possible, I not only explored the data but analysed my interview technique (Briggs, 1986) to explore ways that I could improve my practice before the next interview. This supported me in improving my ability to conduct the research interview as a conversation.

### ***Checking the Data***

Lather (1991) suggests that having a sequence of semi-structured interviews has the potential to allow for a deeper exploration of the research issues by allowing the participant and the interviewer to reflect

in the interim period and return to topics raised earlier. This occurred in this study through the use of interviews at the beginning and end of the PD programme. The second phase of interviews also provided the opportunity to undertake a form of member checking (this is explored further in the section on trustworthiness). Each interview was recorded on audiotapes, with additional field notes being recorded immediately after the completion of the interview. The researcher or an external transcriber then transcribed the material from the recordings.

### ***Student and Adviser Focus Groups***

In this study, I conducted focus group interviews to allow me to enhance my understanding of student experiences of physical education and provide confirmation, clarification or contradictions of their teachers' perspectives. I interviewed the advisers from each region, in both phase one and two, to gain an understanding of what they understood to be the purpose, design, delivery and difficulties of the PD programme that they were providing to schools. While it would have been preferable to interview advisers individually, this was not possible as they were rarely in the office due to their work in schools. Focus group interviews were the most sensible alternative.

Kreuger (1994) defined a focus group as “a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment” (p.6). According to Kreuger and Casey (2000) focus groups allow interaction between members. This permits the development of individual viewpoints and allows for the possible production of information beyond what a one on one interview may achieve. In contrast, Carey (1994) cautions that members of focus groups can respond by “confirming” (p. 236) or tailoring their discussion to fit with the general view of the group leader. Carey also warns that a participant may withhold information, usually due to lack of trust in the group or researcher. Kreuger and Casey (2000) suggest that optimal discussion occurs when participants are not familiar with one another, have some degree of familiarity with the researcher or are homogeneous. In this study, there was variation in the degree to which the participants had had previous contact.

The students involved in the focus groups came from a range of year levels. Each group was homogenous, all from the same class and of

similar age. However across the twenty-five focus groups the age range varied from five year olds in their first weeks of school, through to senior primary classes (Year Seven/Eight) who were aged around 11 or 12. These variations required changes to the length of time for the interview, levels of questioning and use of language across the different focus groups to accommodate both the attention spans and levels of understanding.

As the student focus groups occurred after the lesson observations in phase two, the discussion was stimulated by an invitation to comment on what they had learnt in PE that day. This stimulated discussion, which led to open-ended questions relating to their experiences of physical education. Questions were “phrased in everyday language rather than sociological language” (Chase, 1995, p. 3), as this allowed me to gather the students’ experiences, thoughts and feelings about PE. Questions were presented which allowed the students to confirm, clarify or contradict the views that their teachers had expressed, for example: questions such as “What have you learnt in PE this year?” were used to explore difference in perceptions of learning in PE. By asking students “What do you like or dislike about PE?” students had the opportunity to present their own narratives and perceptions about the classroom environment, their teacher and their learning and access to learning. The nature of the focus group interview, allowed students to co-construct information with little input from me as the researcher.

Questions for the advisers’ interviews were designed to explore the broader contextual issues that impacted on their work in school, as well as exploring what they perceived to be the focus for the design, content and delivery of the PD. The following questions elicited discussion that allowed advisers to expand my understandings of the design, delivery and systemic issues associated with the PD.

- Describe the PD? What has been the focus, and how have you gone about designing and delivering the PD?
- Has it differed from school to school?
- How successful has this been – what has worked and what hasn’t? How do you know?
- What changes would you make to the way in which this PD has been organised and delivered?
- What support did you receive for your role as an adviser?

Students and advisers supplemented the teacher findings and provided further insight into changes in teaching practices across the year. Each student and adviser was given the opportunity to contribute to the discussion. As with the teacher interviews, focus groups was recorded on audiotapes, with me writing field notes immediately after the completion of the interview. While direct quotes from the student and adviser focus group interviews were not included in the findings section of this thesis, they data from these interviews were used to generate a richer picture of the impacts of the PD on teachers knowledges and practices, and processes involved in the design and delivery of the PD.

### ***Questionnaire***

In addition to the interview data, teacher responses to two questionnaires (one in each phase of data collection) used in the MOE evaluative contract, that explored teachers' previous experiences of PE and their previous PD, both in their ITE courses and while teaching, and their experiences of the Model 2 PD programme. In addition, demographic information was gathered to assist in broadening the researcher's understanding of the possible perspectives of the individuals involved. The purpose of the first questionnaire was to add to my understanding of the role that prior experiences have on current knowledges and practice of curriculum and practice in PE, while also providing information to help in the development of interview schedules. With the time restraints on this research and in particular on the length of interviews, the first questionnaire provided important demographic data and background descriptions from the teachers prior to the interviews. The second questionnaire, completed in phase 2, focused more specifically on the teachers' experiences of the PD programme, and teachers' perceptions of changes to their knowledge, practice and programming of PE. Both questionnaires were vital for developing an understanding of the context and background of the teachers' work.

In any research such as this, where the pressures of teacher workloads and spread of regions may limit access to participants, the questionnaires provided an opportunity to gather textual data that elaborated on teachers' experiences, knowledges and practices in PE. Questionnaires provided opportunities to gather all twenty-five teachers'

responses to identical questions. Burns (2000) suggests a questionnaire allows participants to respond to an identical set of questions without being influenced by the style, personality or mood of the interviewer. While this may also provide the opportunity for teachers to have time to think through their responses, a questionnaire potentially limits the chance to further the development of ideas and explore the complexity of the points made in the responses. By using the questionnaires in conjunction with interviews it was possible to explore and expand on teachers' written responses.

There were several other key considerations in constructing the teacher questionnaires.

- The content selected for inclusion had to be prioritised to meet Ministry of Education, project team, and teachers' preferences, so interaction between these three groups was necessary to achieve content validity.
- The wording of the questions in a questionnaire strongly influences the usefulness of the findings (Tolich & Davidson, 1999). In order for the questionnaires to be meaningful and the questions useful they were written in simple, clear and unambiguous language. This increased the chances that the questions would mean the same to all the respondents (Bryman, 2001). There needed to be questions for which answers were quantifiable and would provide 'broad-sweep' information, as well as questions that gave teachers the chance to elaborate their views and ideas (qualitative questions).
- It was also important to consider the implications of having teachers complete questionnaires on top of their already heavy workloads. Therefore, in developing the questionnaire, we endeavoured to ensure that the questionnaires would take no longer than approximately 20 minutes to complete. Thus in designing the questionnaire the research team needed to be highly selective about which questions would be included. It was decided that 'tick box' questions would be relatively quick for teachers to complete, but there needed to be some opportunity in this initial baseline questionnaire for teachers to also add comments if they wished, which would take longer. This resulted in the initial questionnaire taking most teachers longer than 20 minutes to

complete. However, teachers diligently completed all questions. The second questionnaire was much briefer.

The piloting of questionnaires, using primary teachers, assisted in the development of both questionnaires. Feedback on the questionnaires from the research overview group for the evaluative contract completed by Petrie, Jones, and McKim (2007) also proved essential in the improvement and refinement of the questionnaires.

### ***Lesson Observations***

One of the fundamental tenets of interpretive research is the search for understanding of a phenomenon through the eyes of the participants, and an obvious technique is to watch what they do and record this in some way. In this study, lesson observations were used in the second phase of data collection. The purpose of the lesson observations was to provide some insight into the teachers' knowledges, confidence, and ability to deliver PE, at the end of one year of PE-PD. One lesson observation could not explain the development of ideas and changes in programmes and practices. However, lesson observations triangulated with interviews and questionnaire responses, provided a richer picture of the changes in practice and understanding.

The lesson observations were particularly useful in helping to identify interactions between teachers, students, materials and resources, activities, and links between pedagogical approaches and content of a lesson that would not have been possible to obtain through the interviews or questionnaires (Patton, 1990, 2002). Lesson observations provided a tangible account of similarities and difference between what teachers said they had learnt and were doing and what they actually did (Flick, 2002).

A semi-structured focus was adopted for the lesson observations in this study. To this end the observation schedule (see Appendix D) assisted the researcher in detailing practice as it related to the research questions, it included:

- Focus of the PE lesson/learning experience;
- Type of learning activities used, and degree to which activities were inclusive and engaging, appropriate to student level, and provided opportunities for learning;

- Use of resources, both equipment and instructional materials; and
- Pedagogical strategies and approaches used – interactions between learners and teachers.

In relation to Gold's 1958 typology of participant roles (Bryman, 2001; Flick, 2002), these lesson observations were undertaken from somewhere between the observer-as-participant and complete-observer perspective. While the preferred approach was to maintain distance from the lesson and the teaching, this was not always possible. As an observer, in the context of the PE setting, I frequently become a participant in the lesson as I tried to: avoid being hit by a ball or returned equipment that had rolled my way, moved closer to activities to hear the instructions of the teacher and conversations between students, or had students come and stand/sit beside me when they were unable to participate in the lesson. The context, environment and nature of the PE lessons did not allow for the use of video recording to capture the lesson or the voices of the teachers or students, so detailed field notes were recorded on the observation schedule, in ways similar to those used when doing evaluative visiting for student teachers. These notes included examples of questioning sequences, details relating to the choice of activities and the ways in which students engaged or did not engage in these.

A consistent issue in these lesson observations was attempting to adopt an outsider's perspective, without critiquing the practices and pedagogical strategies of the teacher. It was inevitable that my own experiences as a PE teacher, my interests and expectations, would impact on the data gathered from the observations, and challenge me to set aside my insider knowledge (Eisenhart, 2006). These personal positions had implications for what I observed and recorded, and they contributed to my analysis when I was recalling the lesson during data analysis. A heightened awareness of the bias personal perspectives have on the ability to collect objective data increased my sensitivity to the need to observe with an optimally open mind. Ideally two people might observe the one event and, in doing so, diverse accounts can be drawn together to complete a fuller picture. While this would have been ideal, the resources of the study did not allow for it.

### ***Using Documents and Curriculum Resources***

Interviews, questionnaires and lesson observations helped create a rich picture of the interactions between people, tools, documents and curriculum resources. However, the collection and analysis of the documents and resources used by advisers and the teachers prior to and during the PD provided a useful source of information to support themes emerging from the other data sources, and proved essential in making sense of the PD under investigation.

School systems and PD programmes use a wide array of documents to describe and define the nature of teaching and learning as they want it to occur in their context. Schools utilise long-term plans, lesson plans, and national curriculum to design learning in the school setting. A PD programme employs a range of documents and curriculum resources to enhance teacher learning, including feedback sheets, example lesson, unit and long-term plans, and national publications, e.g. *The Curriculum in Action Series* (produced by Learning Media, for the MOE). It was therefore essential to collect documentation and copies of curriculum resources from advisers, individual teachers, and where possible the Ministry of Education, prior to and throughout phase one and two. These documents and curriculum resources were collected and analysed to explore how teachers and advisers make use of and interpret these them in the process of a PE–PD programme. This was of importance in understanding how these documents and resources mediate teacher learning.

### **TRUSTWORTHINESS**

The notion of trustworthiness is an important aspect of qualitative research methodology. If representations are not considered trustworthy, then doubt is cast on the researcher’s findings (Goetz & Le Compte, 1984; Neuman, 1997).

*Trustworthiness depends on evidence of the researcher’s involvement with others and their acceptance of the researcher’s interpretations. Hence the conventional interpretive focus on being there and establishing interpretative validity” (Eisenhart, 2006, p.576).*

There are several conventional ways to enhance the trustworthiness of the research and representation, and steps have been taken in this research to achieve this. These are detailed below.

### ***Interpretive Validity***

A range of procedures were taken in advance of engaging in data collection to enhance the interpretive validity of the research. These included the use of mixed methods, systematically documenting the evidence, piloting data collection tools, member checking, and peer debriefing.

“A detailed description of the research process and outcomes” contributes to ensuring “the credibility of a study” (Maykut & Morehouse, 1994, p. 145). This detailing, included in prior sections of this thesis, attempts to highlight “that the processes of the research are carried out fairly, that the products represent as closely as possible the experiences of the people [and context] who are studied” (Ely, Anzul, Friedman, Garner, & Steinmetz, 1991, p. 93). Research procedures and their rationale were systematically documented to provide a trail of evidence (Maykut & Morehouse, 1994; Miles & Huberman, 1994) and as a contribution to the ‘authenticity’ (Ely et al., 1991, p. 95) of the research account. Thus, the processes and justification of participant, data collection, and data analysis were carefully recorded. Mixed methods, varied participant groups and individuals, and temporal phases, were used as a research strategy that triangulated the data and added rigour, fullness, complexity, richness, and depth to the inquiry (Denzin & Lincoln, 2005b; Stein, Silver, & Smith, 1998). As outlined in the methods section above, the questionnaires and interviews were piloted prior to being used with teachers, advisers and students. In addition a process for mentally rehearsing, reviewing and reflecting on the interview technique was used throughout the data collection process.

However, regardless of these measures, further steps were taken during the data gathering, analysis and interpretation phases of the study. In particular it was important to ensure the participants “agree that their sense making is captured in the researchers’ representations” (Eisenhart, 2006, p. 574). Member checking is an important technique for establishing interpretive validity because the participants independently review the interpretations made by the researcher (Denzin & Lincoln,

1994; Ely et al., 1991; Lincoln & Guba, 1985). The current investigation employed two forms of member checking. Firstly, during the actual interview the researcher paraphrased the participants' responses to assist in the clarification of their statements. Secondly, during the second interview the researcher shared interpretations from the first interview and allowed the teachers to revisit them and suggest changes. Ideally the study would have included opportunities for the participants, particularly the teachers, to validate their interview transcripts (Hanson & Newburg, 1992). This process would have enhanced the credibility of the research. Due to constraints in the context of this study this was not possible after the second phase of data collection. Teachers reported having too much to do and so were not able to spend time on that. The research team for the MOE contract decided to not send out the transcripts for member checking, out of respect for the high workload that these primary teachers were carrying.

The process of peer debriefing (Creswell & Miller, 2000) was used in order to enhance the interpretive validity of the study. Colleagues and supervisors were utilised to explore my interpretations of the data. They challenged me to examine and explain the outlier data, and they acted as sounding boards, asked probing questions, raised issues that I had not perceived and provided written feedback on methods and interpretations. By working with people outside of the study, I was challenged to see the data from different perspectives. This helped in the development and representation of the interpretations.

### ***Having Been There***

Interpretive fieldwork is impossible to replicate, as essential aspects of the field change, including contextual differences, different participants, and differences between researchers (Merriam, 1998; Neuman, 1997). Interpretive researchers have the opportunity to learn something new about a phenomenon through direct participation (Eisenhart, 2006). Demonstrating that the researcher has directly participated in the settings where the data were collected, by being present in the schools, talking with teachers directly, and observing their practice, lends credence to the trustworthiness of this study.

Steps taken prior to and during data collection, engagement in the field of study, and measures during the analysis, interpretation, and

evaluation phases have been taken to enhance the validity of the represented research. It is hoped that these steps ensure that the research is viewed as trustworthy and valuable to the education community.

## **ETHICAL CONSIDERATIONS**

At all stages of the research process, from design to dissemination, it was important to consider the ethical implications of my decisions and actions. Given that a central focus of interpretive research is to respectfully explore and value the perspective of others (Strike, 2006), ethical considerations supported the research to advance the position of mutual respect.

The main areas for ethical consideration included in the investigation, and central to views of ethics in educational research, focused on:

- reducing any potential harm to participants through a process of gaining informed consent;
- protecting participants interests and right to privacy and confidentiality,
- avoiding deception; and
- doing justice to the participants when analysing and reporting the data.

(Bryman, 2001; Christians, 2003, 2005; Flick, 2006; Neuman, 1997).

Furthermore, the following strategies were employed in this study to ensure that the research was ethically grounded.

- As the research entailed accessing teachers and students during school time, consideration was made for the impacts on teachers and their students if they were removed from classes during lessons. To reduce the impacts, visits to school were conducted at times that were most suitable for the participants. Although there never seems to be a 'quiet' time in primary schools, steps were taken to ensure that there was minimal disruption to their normal activities. These included meeting with teachers in teacher release time, and negotiation with schools and individual staff about what would be good times to visit the schools.

- All participants were informed and reminded during each phase of the research that the research was not about evaluating or judging the worth of advisers' work or the capabilities of the teachers to deliver PE. As 'harm' can entail a number of facets, including harm to participants' academic or professional development, job security and personal embarrassment (Bryman, 2001; Neuman, 1997) the teachers and advisers were reminded that the research focused on the overall impacts of a model of PD, not on the work of them as advisors or teachers. The teachers were also informed that the research would bear no weight in teacher appraisals because their responses were to remain anonymous. The advisers were assured that involvement in this research would no way impact on their employment in School Support Services, and all measures would be taken to ensure their anonymity in the dissemination of the findings.
- Developing a thorough understanding of the different school contexts throughout the three regions involved in the study allowed me to recognise cultural and social considerations that needed to be addressed as I undertook this research. These included but were not limited to practices such as, following Māori protocol by attending a Pōwhiri (official welcome) before working in two schools, recognising, respecting and contributing to the shared meals that were a feature of schools, and respecting the sensitivities about how teachers felt they were perceived by others both in and outside their school community.

The project followed the University of Waikato Human Research Ethics Regulations 2000 and the ethical guidelines of the New Zealand Association for Research in Education (NZARE). The University of Waikato Ethics committee approved the study prior to any contact being made with schools, or data being collected.

## **DATA ANALYSIS**

In attempting to create a rich, in-depth picture of how primary teachers understood and practised PE and how professional learning opportunities assisted in teacher development, theories of teacher knowledge and criteria for effective PD provided a framework for analysing the impacts of a PD programme on teacher learning. This

framework and the methods for handling and interpreting the data were used for analysing data collected in both phase one and phase two of the research.

In this research, theories of teacher knowledge formed the basis for an analytical distinction, not a distinction that exists in the practical reality of teachers' everyday practice. For the purpose of this thesis, the heuristic was based on three of the four domains of knowledge discussed in more detail in the literature review, domains that Grossman (1990) refers to as the cornerstones of theories about teacher knowledge. These are knowledge of general pedagogical approaches, subject matter knowledge, and pedagogical content knowledge.

In addition, the factors outlined in the literature review that made for effective PD provided a framework for interrogating the data associated with the design and delivery of the PD and the impacts for teacher learning. These include analysis of the findings in relation to:

- The impact of the length of the PD;
- School-wide and context specific programming;
- How teachers were engaged as active learners;
- Opportunities for teachers to work collaboratively;
- The content of the PD; and
- The provision of resourcing and support

In this study, the process of qualitative data analysis began with the reading and rereading of the transcript data, listening to the audio recordings, trawling through the field notes of lesson observations, revisiting the qualitative questionnaire responses, and reviewing the documents provided by the teachers, until I had an understanding of the whole data set. This was essential given that I had previously worked intensively with the data as part of the Ministry of Education contract, and needed to be able to explore the data in relation to my research questions.

The process of handling, managing and coding the extensive amounts of data was supported through the use of the qualitative analysis software called ATLAS.ti developed by Muhr (1991). All qualitative data were converted to PDFs and uploaded into the ATLAS.ti programme. ATLAS.ti was not used to analyse the data. It was used to connect selected words, phrases, sentences and whole paragraphs from transcripts and memos

from field notes to codes. The data were openly coded using a line-by-line approach (Charmaz, 2003) to identify the substantive codes emerging in the data (Glaser, with assistance of Holton, 2004). The following example illustrates how the data coding process occurred:

Text: “We are doing more with the juniors to help them solve problems, especially when they are playing games. We stop and have a look at what the problem is, what’s causing it, and what could they do to solve it”

Coding Categories: Lesson content, Lesson structure, General Pedagogical Approaches, Questioning, Teaching Games for Understanding

Following this initial phase of the analysis more focused coding occurred, with new codes being developed and other codes redeveloped as new categories emerged and others merged. This meant that some units of the text were coded several times. In addition to the open coding process, analytic memos (Miles & Huberman, 1994) were used to record thoughts and ideas about the coding process and the data. In combination with the coded data, memoing provided the basis for early interpretations about the emerging themes and insights that the data was revealing. For example:

Text: “I’m not like a real PE person, like I’m not into physical activity myself. But I have realised that it’s not about me it’s about me educating them and I am quite comfortable doing that”

Coding Category: Personal change

Memo: Connects to questionnaire responses, lesson observation and colleagues point about her willingness to engage in the PD and learn more.

After the focused coding, coded material from across all the data sources was drawn together into new documents, e.g. a document with all phrases coded *PD content*, using the ATLAS.ti software to support the process. These data were then revisited and a second cycle of memoing happened. At this stage of the analysis process two main tasks occurred, specifically “identification of themes in coding categories” and “identification of themes across coding categories” (Knafl & Webster, 1988, p. 197). These tasks were supported by two basic analytical

procedures, that of “making comparisons” and “asking questions” (Strauss & Corbin, 1990, p.62) of the data. Throughout the process themes emerged in relation to research questions.

While the qualitative data from the questionnaire were entered into ATLAS.ti, the quantitative data were loaded into an Excel spreadsheet. For the purpose of this thesis the quantitative data were only used to provide demographic background information about each teacher. Therefore, the analysis simply involved counts for statistical purposes of description.

## **CHAPTER SUMMARY**

The research in this thesis adopted an interpretive methodology, grounded in sociocultural perspectives and theories of teacher knowledge. This methodology was useful in exploring the research questions and examining the process and impacts of one model of PD from both the inside-out and outside-in. Data were generated using a mixed methods approach which included semi-structured and focus group interviews, questionnaires, lesson observations, and document analysis. The trustworthiness of the data was ensured as far as possible through the use of triangulation, member checks (where possible), the piloting of questionnaires and interviews, peer debriefing, and a detailed chain of evidence.

## **CHAPTER FOUR – FINDINGS**

This chapter reports the findings from data collected about the impacts that Model 2 of the *Physical Activity Initiative* PD programme had on a sample of primary teachers' knowledges for teaching PE. Firstly, this chapter explores the primary teachers' pre-professional development (PD) knowledges of physical education (PE). Secondly, findings are presented on how teachers perceived the content and learning associated with the PD. Thirdly, findings are presented regarding teachers' post PD knowledges for teaching PE, the impacts on classroom practices. The findings are drawn predominantly from twenty-five teacher interviews that occurred before and after the PD, from ten primary schools spread throughout New Zealand. Additional data from teacher questionnaires, lesson observations and document analysis provide further evidence of changes to teachers' understanding and practices in teaching PE.

### **INITIAL PERCEPTIONS AND PRACTICES**

This section of the findings reports teachers' pre-PD understanding of the nature, purpose, and curriculum of PE, and pedagogical strategies (general and subject specific) used for teaching PE. The findings are drawn from the analysis of twenty-five teacher interviews and questionnaires completed before participating in the yearlong PD programme. This pre-PD information provided the basis for the assessment of the post-PD impacts.

The teachers who participated in this research were each unique while at the same time they demonstrated patterns in terms of their knowledges for teaching PE. The varied nature and make-up of primary school PE means that examining the impacts of PD on teachers' knowledges was complex; no two schools had exactly the same programme and individual teachers brought their own perspectives, attitudes, and beliefs to their teaching of PE. Nevertheless, interviews and questionnaires with the twenty-five generalist teacher's highlighted widespread similarities in programmes and practices related to PE. These common patterns are outlined below in an effort to provide a description of PE as it appeared to be commonly understood and practised in primary schools in 2006.

## **SUBJECT MATTER KNOWLEDGE**

This section explores the teachers' subject matter knowledge, in relation to the nature, purpose and curriculum of PE. While PE content knowledge is also part of subject matter knowledge, it is not identified as a separate section in the findings but instead is woven across the identified areas.

### ***The Nature of Physical Education***

One of the initial difficulties in describing current practice in PE is defining what is meant by the term PE, and how teachers understand the nature of the subject area. Teachers in the ten schools used the term PE to encompass the range of physical activity opportunities, both planned and unplanned, that occur during class time, regardless of whether these were linked in any way to *Health and Physical Education in the New Zealand Curriculum* [HPE curriculum] (Ministry of Education, 1999). These included: syndicate/class sport, *Perceptual Motor Programmes* (PMP is a motor coordination programme for school age children), sports afternoons, tabloid sports, daily fitness, skill-based PE sessions and incidental physical activity opportunities such as games and 'brain' breaks. For some teachers (four of the 25) weekly PE programmes consisted solely of fitness and/or syndicate sports. For others, PE also included skill based sessions, along with sport and daily fitness sessions. Regardless of the terminology used to identify activities in PE time, teachers across the ten primary schools understood that the nature of PE was different from other subjects as it uniquely focused on bodies on the move, sport and games, as opposed to "thinking". Bronwyn's comment, below, is representative of teachers' views about PE as it relates to other subjects.

*I think PE ... it's a little bit like art really. I always think of them as sort of separate sort of subjects. I love both of them and always did quite a bit of it, but it [PE] was sort of more like a creative and a ... really happy enjoyable type of subject ... whereas the other ... like the English and the maths and all that sort of thing, is like a heavier subject, if you like, and it's into a thinking sort of a subject (Bronwyn – Interview 1).*

All twenty-five teachers recognised movement as key to defining PE as different from other subjects. In this focus on movement, teachers identified two distinct components of PE. First, the development of physical skills for participation in games/sport was central to all twenty-

five teachers' views about the nature of PE, in the language teachers used to describe the purpose of PE. For example, PE was viewed as being about

*Games, building strength and muscles, helping children to keep active - skipping, ball skills, gymnastics, team games (Culhane – Questionnaire 1).*

*Teaching skills used in sports/games. Throwing, catching, dribbling etc to incorporate into sport and game playing. Fitness is also a part of PE as well as teaching about the body (Marg-Interview 1).*

Secondly, 80% of the teachers responding to the questionnaire viewed PE as being about the development of positive attitudes toward physical activity, for example, PE is “any part of the programme which teaches skills, attitudes, fair play, competition and reflection in moving the body in an active way” (Fiona – Questionnaire 1).

Only one teacher initially wrote about a broader perspective of PE. She suggested that PE

*educates children so they have an appreciation of the benefits of regular PA [physical activity], it develops their movement concepts and motor skills, encourages positive interaction with other people, makes them aware of lifestyle choices and recreational and sporting resources available (Leigh – Questionnaire 1).*

However, it is worth noting that Leigh had already attended one PD workshop that explored the difference between physical activity and PE. In her follow up interview, Leigh suggested that this one-off workshop had contributed to her thinking about PE more broadly.

Data from the twenty-five teacher interviews and questionnaires highlight that, prior to PD, teachers understood that the nature of PE was about the teaching of physical skills and positive attitudes that would allow students to participate in games, sport and physical activities that might be useful the present and in later life.

### ***The Purpose of Physical Education***

Given teachers' pre-PD view about the nature of PE, it was not surprising that all teachers believed the purpose of their school PE lessons related predominantly to physical outcomes, such as:

- preparing children for physical activity, games and sport (100% of teachers):

*Some kids just don't have the skill development they need to play sport. They are not coordinated and they need practice... skill sessions, to be able to do the events that we run and even just be hang on the jungle gym (Jess- Interview 1).*

*Some can't bounce a ball and catch it, or hit a tennis ball, or throw a shot put. The gap between those who can and can't is widening. There are those who are focused and those who aren't. ... We need to teach them the skills so they can participate in physical activities (Kath- Interview 1).*

*It's [we do PE] so that they [students] have the knowledge, skills and attitudes to feel confident participating in a range of physical activities, and can have a fulfilling life (Kim- Questionnaire 1).*

- getting “kids” fit (80% of teachers):

*Students are so cotton woolled. Their parents drop them off at the gate, they never walk anywhere, and the girls are sedentary, they don't want to move around at all. That's why I do PE [daily fitness] so that I can make sure they do some physical activity and are fitter (Fiona - Interview 1).*

*We all know kids are less active, the stats show obesity is a problem in our society. The future in PE is what... a society full of potatoes and a few who are fit and healthy, we need to get more of them interested in physical activity, and moving other wise we are going have bigger issues with obesity (Rowland - Interview 1).*

In addition, the majority of teachers (19 out of the 25) considered that PE generated mental/cognitive benefits. In particular, teachers commented on the benefits of play and being active and “clear their heads” (Fiona- Interview 1), “so they are much more alert, they work better together and are just better in class” (Culhane - Interview 1). Tina (Interview 1) suggested that her boys in particular needed the “brain breaks” where they could stand up during reading time and “have jumping brain breaks, you know stand up count to ten, do ten jumps”. She felt that this made them much better at their class work, and not so “restless”.

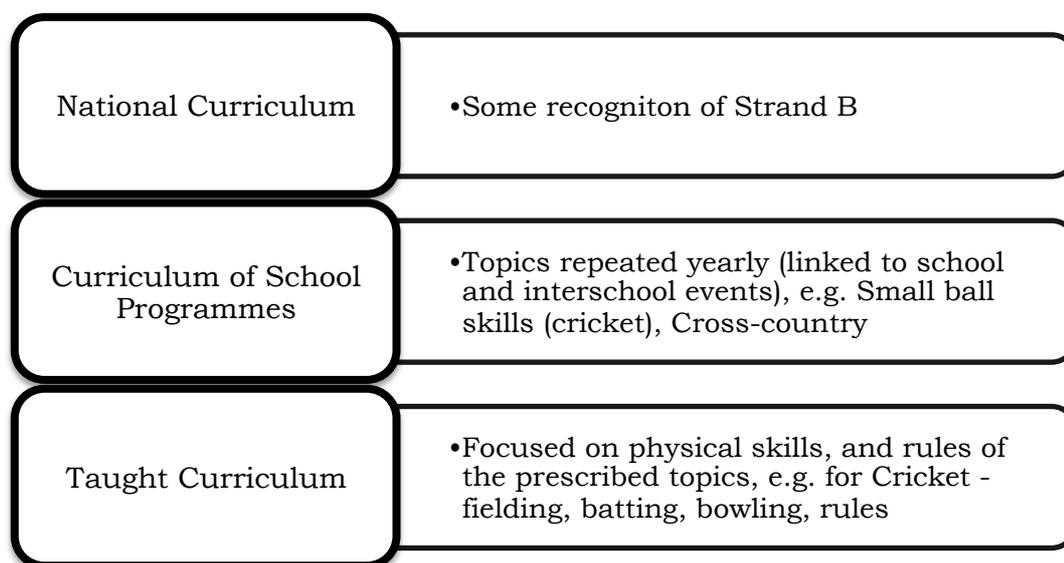
For these twenty-five teachers the purpose of PE appears to be associated with physical health benefits, preparation for sport and having a break from the classroom. These purposes reflect a narrower conceptualisation of the purposes of PE articulated in the 1999 HPE curriculum.

### **Curriculum Knowledge**

As outlined in the literature review, the curriculum of PE can be explored at three levels, national policy, school programmes, and taught or enacted classroom programmes (in the form of units/lesson). Figure 4

provides a summary of how the twenty-five teachers understood the curriculum of PE at each of the three levels that are detailed in the following pages.

Figure 4: The content of PE prior to PD



### ***National Curriculum***

Seven years after the release the 1999 HPE curriculum, teachers appeared to have limited knowledge of, or experience with the curriculum document. During interviews with primary teachers, it became apparent that the HPE curriculum was not a widely accessed or utilised tool in their teaching repertoire. Five of the longer-serving teachers commented that they could not remember ever having had any professional development focusing on PE or the ‘new’ HPE curriculum after it was released in 1999. Of the other twenty teachers, only five remembered having more than “a couple” or “a series” of staff meetings about the HPE curriculum, but were unable to recall the content of these sessions, or what the curriculum detailed as the content for learning in PE.

None of the twenty-five teachers interviewed were able to recall the central features of the HPE curriculum, including those that provide direction for what is to be the content of PE (the underlying concepts, key areas of learning or strands). Some teachers (40%) identify that “Strand B is the PE strand”, although the remaining 60% were not convinced this was the case, or were unsure of any of the strands. It is worth noting that Strand B, titled Movement Concepts and Motor Skills, is only one of four strands in the 1999 HPE curriculum (see introduction chapter for details of the other three). Across all twenty-five teachers, the common

feeling was that the 1999 HPE curriculum document was “vague”, and it did not “really tell us how or what to teach in the school programme or in our lessons, just that we should bring in problem-solving and peer coaching” (Jade– Interview 1). Other teachers made explicit points that highlighted their understanding and use of the HPE curriculum, such as:

- Culhane: “I learned about the curriculum from just reading the document. I didn’t have a course, so its just self taught” (interview 1);
- Bernie, who had been a lead teacher in the curriculum implementation contract: “I use the health part of the curriculum more than the PE, but really I don’t look at it that often” (Interview 1);
- Fiona: “It’s a long time since I looked at it [the curriculum], none of us are doing it. If it was shorter then I might read it more” (Interview 1).

A useful source to help primary teachers understand the content and delivery of content as articulated in the HPE curriculum is *Curriculum in Action*<sup>4</sup> [CIA], produced by the Ministry of Education. These support materials for teachers to use to explore and implement the HPE curriculum, in particular the 14 designed for primary schools, were sent to every school. Across the ten schools, the majority of the twenty-five teachers (80%) interviewed had not heard of or had access to the CIA resources. Two teachers knew that there were CIA books for health, but were not aware that there were also these support materials to help them understand the content of PE.

The findings suggest that teachers have limited knowledge of the content of PE as it is articulated in the New Zealand HPE curriculum. It would appear that before engaging in the PD, teachers’ views and knowledges of PE differ vastly from the official view of PE articulated in the 1999 HPE curriculum.

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<sup>4</sup> The *Curriculum in Action* series (Ministry of Education, 1999-2004) includes 22 publications designed to support teachers with the implementation of the HPE curriculum. Of these publications, 14 are designed to support PE in primary schools. A list of these publications can be found at [www.tki.org.nz](http://www.tki.org.nz).

### ***Curriculum of School Programmes***

Prior to engaging in the PD, the curriculum of school programmes was restricted to the development of movement skills, commonly sports specific, and fitness. School PE programmes, as articulated by all twenty-five teachers in the first interview and questionnaire, and after analysis of documented school programme, paralleled teachers' knowledges of the nature and purpose of PE. As a result the learning aims of school programmes appeared to link to only three of the fifteen achievement objectives outlined in the 1999 HPE curriculum. They were:

- Strand B objective 1 - develop and apply, in context, a wide range of movement skills and facilitate the development of physical competence;
- Strand B objective 2 – develop a positive attitude towards physical activity by accepting challenge and extending their personal capabilities and experiences;
- Strand A objective 2 – understand and appreciate, as a result of experience, the contribution of physical activity to personal well-being (read by the teachers interviewed to mean physical wellbeing)

A range of sports and physical activities, known by teachers as topics, provided opportunities through which students were able to meet these learning aims. School programmes were set so that students across all year levels repeated the same topics every year, in the activity-orientated framework. For example, students participated in lessons focused on preparing for cross-country in Years one through eight, with programmes remaining largely unchanged for the different year levels. The following list details the topics that all twenty-five teachers listed as the basis for their school programmes. Therefore all ten schools included:

- aquatics;
- small ball skills, alternatively referred to as summer games (e.g. cricket, softball, paddertennis);
- large ball skills, alternatively referred to as winter games (e.g. netball, basketball, soccer, volleyball);
- gymnastics;
- cross-country, athletics (including run, jump, throw) and in three schools, triathlon;
- dance and movement (e.g. folk dancing and/or creative dance);

- fitness (in the form of skipping, running or Jump Jam <sup>5</sup>).

Louise and Ruby, both from one school, a large urban school with an ethnic composition made up predominantly of Māori and Pasifika students, indicated that they also included Te Reo Kori (The World of Movement from a Māori perspective) as a topic in their programme. One other school, with a Principal who had previously been a PE specialist and who valued motor skill development, ran a structured Perceptual Motor Programmes curriculum in the junior syndicate, as part of their weekly PE programme. Other than these two outliers, all other schools ran a standardised PE programme.

The research findings suggest that classroom PE programmes and practices are primarily driven by a school/syndicate overview which identifies the ‘sports’ that will be taught each term. Teachers at all except one school indicated that they primarily worked from a yearlong plan provided by either a syndicate leader or teacher in charge of PE (sometimes referred to as teacher in charge of sport), although they were generally left to their own devices to determine the make up of each ‘unit’. For example, teachers suggested that

*The teacher in charge of sport/PE provides us with a term overview of topics and we focus on teaching this. We cover gymnastics, small balls, large balls, swimming, skipping, cross-country, folk dancing and team games (Mere – Questionnaire 1).*

*We are provided with a school overview and are supposed to follow it... it helps keep to the school programme, but I feel locked into doing the ‘right’ thing (Sally– Interview 1).*

In contrast to the nine schools that had a long-term plan of content, Kim indicated that she was frustrated by the undefined nature of her school PE programme, which meant, “individual teachers create their own long-term plans, as there is nothing clear from the school” (Interview 1). While there was nothing specified from the school, Kim indicated in her interview that all the teachers knew what to teach when, as they had “been doing the same stuff or years”. It was understood that teachers would deliver the same series of topics that the other nine schools were

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<sup>5</sup> Jump Jam is a resource kit of ‘Kidz Aerobix’, designed specifically for primary and intermediate schools. It is a programme designed to support teachers to deliver physical activity, in the form of fitness/dance routines. Jump Jam is a commercial product.

delivering. The only additional element was greater emphasis on fitness, due to their Principals' desire to improve student fitness levels.

All twenty-five teachers commented on the need to cover particular topics at set times during the year so that students were prepared for school-wide events, such as cross-country and athletic sports. In urban and semi-rural schools in particular, PE also provided teachers with opportunities to prepare their teams for inter-school events. The following quotes from three teachers, all at different schools, are representative of all twenty-five teachers' views about what influences their school PE programmes.

*Zone and regional events dictate what we have done and when. It is all skill based and sport (Berta- Interview 1).*

*PE isn't curriculum based, it reflects the season and what else is going on... Cluster cross-country etc determines what we teach when (Kath- Questionnaire 1).*

*Syndicate leader decides what we do, It's a bit of an institution, we do this at that time of the year and it just carries on like routine – could change that, but it makes sense to do winter games in winter and summer games in summer. What determines it more than anything is the interschool competitions, so you prepare for those. So there's swimming at the start of term one, winter games during winter, rugby netball, athletics at the end of the year so that's what you do then (Marg- Interview 1).*

The findings highlight that the PE programmes in these ten schools appear to have little relationship to the national curriculum statement, and are instead based on historic programmes and school events. They continue to reflect a curriculum based solely on sport-based activity-orientated frameworks.

### ***Taught Curriculum***

While the topics teachers were required to teach were made explicit in all except one school, teachers appeared to be left to make their own decisions about what content needed to be delivered in each topic. All twenty-five teachers discussed how their lesson focus was on the physical skills, and where appropriate the rules needed by students to participate in the physical activities prescribed in the school programme. As a result, the content of lessons, and learning opportunities for students, appeared to be strongly linked to the development of sport specific skills. For example, teachers could identify that in a cricket unit

they would need to cover techniques related to batting, bowling, and fielding, as well as help students to understand the rules of the game. The following three quotes highlight how teachers typically talked about the taught curriculum.

*The learning is different from unit to unit. For example, in swimming we do pool safety first, and then skills like how to float, going underwater. And then in the upper levels we do stroke technique, like freestyle and backstroke (Jeanette – Interview 1).*

*My lessons focus on basic skills, basic skills they can develop that they can use further to participate in sport (Kath – Interview 1).*

*In my PE lessons we tend to focus on things such as ball skills, then we can apply it to practical sports situations. We focus on gross and fine motor skills, agility, rules, and coordination (Rowland – Interview 1).*

Teachers unanimously reported that PE was not always delivered regularly as part of their classroom programme. They identified a range of pressures or factors that compromised the time given to PE, including: the weather; “the crowded curriculum”, whole school commitments, such as productions; unfinished topic studies or “other educational priorities” and classroom tasks. It became increasingly apparent that for many teachers, PE was something that happened only when all the other work was complete or the students needed a break from the classroom, although 19 out of 25 teachers did ensure that they engaged students in some form of daily fitness or physical activity. As a result, for some classes, the content of their PE programme appeared to be related to fitness (mainly in the form of running around the field, Jump Jam, or some skipping), and/or going outside for a quick class game (e.g. tag, rounders).

While all teachers were able to recognise the core content needed in units/lessons (e.g. in a cricket unit they would need to cover batting, fielding), there was variation in teachers’ confidence and sense of their own ability to perform the skills, which appeared to inhibit teachers’ ability to identify and develop the content of the activities used in lessons. Few teachers (four of the 25) felt confident that their knowledge of fundamental movement skills and sports was ‘expert’ enough to develop the content for each aspect of the topics. These four teachers felt

that their own previous experience as physically able movers made them better PE teachers. For example, Linda suggested that

*PE is a fortè of mine. My practice has been good. I've always taught skills. I teach ball skills and use the KiwiDex as a guide to help break things down and come up with games and activities (Interview 1)*

In contrast to the teachers who felt they knew enough about PE to teach it well, there were five teachers who lacked confidence in their ability to deliver “proper” PE lessons, as they did not perceive themselves to have an adequate understanding of movement. These five teachers talked about how their own feelings of physical inadequacy affected their teaching. The following quotes from Jess and Marg demonstrate this sense of inadequacy these five teachers felt.

*My biggest fear is actual skill teaching, how to teach them. At the moment that is probably my biggest fear, how to actually go out there and teach them how to throw when I don't actually know myself. I need to know how to break the skill down, so I can show them how to do it (Jess – Interview 1).*

*I must admit I don't feel that confident. I need help. I need to be taken through the skills of the different games, how I can go about teaching like cricket or rugby, taken through the basic rules because you are not going to teach them the full game. There needs to be specific help for teachers, simplified rules for novices, with not too much to read. I just want something to give you the basics... booklets on how to teach netball, soccer, and hockey... if I can read that, I think I can do that, dribbling skills and then into a game (Marg– Interview 1).*

For three of these teachers a lack in confidence, and a sense that “no one seems to care if I take my class out for PE”, resulted in them delivering PE lessons that were purely focused on children getting some fitness and a break from the classroom. Jess was the exception. While she recognised that her own experiences of PE had been negative, she was conscious that “PE has to be done, so I can't let my own experiences impact on my teaching. I just need to do the very best I can” (Interview 1).

The remaining sixteen teachers indicated that there were topics they felt confident teaching, and had enough PE content knowledge to be able to do a good job. However, they also identified some content areas that they feel less comfortable teaching. The following four comments are a sample from this group of sixteen teachers.

*I feel more or less confident depending on what the topic is. I am good at small and large ball skills, but less good at gymnastics and athletics (Patricia – Questionnaire 1).*

*I feel less confident about my teaching of PE than other subjects, because I am not sure I am giving them the correct information and/or delivering the lessons correctly (Katie– Questionnaire 2).*

*I think I'm really good in a lot of areas but lack a bit of skill and/or knowledge in some areas. Consistency is an issue at times. It makes it hard to monitor student development, when I am not sure what to look for (Hamish– Questionnaire 1).*

Teachers' self perceived ability appears to have had a major impact on their motivation and confidence to teach PE, and therefore the PE curriculum that their students experience.

### **PHYSICAL EDUCATION PEDAGOGICAL APPROACHES**

Initial interviews highlighted that the twenty-five teachers typically used teacher directed approaches in PE lessons that centred on tightly structured routines. Given that teachers understood PE to be predominantly about getting fit, learning physical skills and being able to play games/sports, teachers structured lessons around 'keeping kids moving'. As a result, regardless of the topic or focus, all twenty-five teachers reported, both in their questionnaire and interview responses, that the majority of lessons followed a similar format: warm-up or energiser activity, skill teaching/practices, minor games (or relays/races), and warm down. Linda and Ruby's comments, below, were indicative of all the teachers' lesson structures.

*The whole structure ... yeah, there's fitness, the skill, then ten minutes to apply it to a game and then five minutes warm-down (Linda– Interview 1).*

*Usually we will play a game to warm-up, they tend to like that. Then we have a little bit on skills that leads up to the game or sport that we are playing, so we do a modified game (Ruby – Interview 1).*

The only exceptions to this structure occurred when fitness or a massed game served as the PE lesson. On these occasions teachers reported that they just went straight into the activity. For Pip, all the Year One classes (over 80 students) would go to the hall at the same time for PE and they would just do relays and then play a game. Eleven teachers commented that they followed this pattern as they had limited equipment or time to do anything different. As Mere suggested "sometimes we will just go out

and play a big game of tag or rounders or something. It's all we have time for some days" (Interview 1).

Most teachers (19 out of 25) commented that they used a lot of pair work in the skill teaching part of the lesson, as this gave students more time to practice, and students did not have to be on display in front of the others. Across the twenty-five teachers interviewed, it appeared that the use of teacher-directed and practice approaches were the most common teaching styles adopted in their PE lessons. This was a direct consequence of their PE content knowledge.

## **THE PROFESSIONAL DEVELOPMENT**

The previous section provided baseline data about the sample of teachers' views and practices in PE before the PD intervention. This section outlines the teachers' experiences of the intervention (outlined in Chapter One), which is important background for understanding the impacts of the PD. It describes the professional learning opportunities teachers were provided with and engaged in. The consensus on the content of the PD, as evidenced in the work plans of School Support Services (SSS) advisers and in minutes from the SSS regional co-ordinators meetings, was to focus on quality teaching, student-centred approaches, and curriculum understanding in physical education. This section of the findings provides an overview of the content and delivery of the PD for the participating twenty-five teachers interviewed in this project. The findings are taken from what I know about the PD from official documents, focus group interviews with the advisers, and from what the teachers told me in the post-intervention interviews.

### **CONTENT OF PROFESSIONAL DEVELOPMENT**

It was evident from teachers' comments that the focus of the PD had been on:

- Quality (general) teaching approaches – particularly using learning intentions, ability grouping and questioning.
- PE-specific (student-centred) approaches, particularly *Teaching Games for Understanding* (TGfU) or some form of this, such as a games approach and, to a lesser extent, *Adventure Based Learning* (ABL). In addition, teachers had the opportunity to explore the concept of a movement education approach.

What was less evident from the teacher interviews was how knowledges of the nature and content of PE were to be explored and developed in the PD programme.

### **General Pedagogical Approaches**

All twenty-five teachers identified, in both interviews and questionnaires, that exploring quality teaching approaches in their PE lessons had been a consistent focus in the PD. Focus areas included: questioning, ability grouping, feedback/feed forward, setting up learning books, sharing learning intentions/success criteria, allowing children to practice and reflect on practice, and creating a positive and safe learning environment. Quality teaching was explored and demonstrated to teachers in staff meetings, model lessons and through the unit and lesson plans provided. Teachers across the ten schools all reported similar experiences. The following three quotes reflect the range of experiences of the twenty-five teachers.

*We've had the adviser come in and talk to us about ability grouping and questioning which related really well to the short games that she did and teaching the skills and transferring the knowledge (Marg- Interview 2).*

*She [the adviser] just talked about how it [PE] is the same ... like maths. Students are not all at the same level so we shouldn't be expected to be teaching them all at the same level ... so do ability groups and you know ... take the group that probably isn't as strong so that the other ones can be doing independent stuff (Jess- Interview 2).*

*The adviser come out and modelled a game from the Games for Understanding aspect, and modelled questioning and modelled sharing the learning intention (Kim- Interview 2).*

### **Physical Education Pedagogical Approaches**

Aside from the focus on quality teaching approaches, the findings indicate that the twenty-five teachers were exposed to three PE specific pedagogical approaches (also referred to as curriculum models), these being TGfU, ABL and a Movement Education approach (called Moving in Context throughout this PD). These curriculum models, drawn from both PE practice and sport coaching, appeared to challenge the teachers to rethink the way they taught PE. In particular, they appeared to focus on alternative ways to facilitate skill development, while considering the learner, the task, and the learning environment.

All twenty -five teachers were exposed to games, using some form of *Teaching Games for Understanding* (TGfU also referred to by teachers as Game Sense or a games approach). For the twenty-five teachers involved, the development of an understanding of how to use games effectively to teach PE with an education purpose appears to have been the most recognisable feature of the PD. Twenty-one of the teachers interviewed referred to games as a substantial, and valuable, part of the PD programme.

For lead teachers such as Bernice and Rowland, exposure to TGfU at cluster meetings and in staff workshops had helped. Bernice suggested that “the game sense thing, I found was the best and the reason it was the best is that we were quite submerged in that, I think. I was able to take it back and implement it” (Interview 2). Rowland, felt that

*It's been an introduction, if you like, to something that ... for example ... the Invasion ... the whole term Invasion game, when we did that, I got my head around it because I'd been to the workshop. When I said to the others, 'We're going to be concentrating on Invasion games', I had to go back to the basics and explain what Invasion meant and take it from there because it was gobbledy-gook. The activities that followed were good; they enjoyed it (Rowland – Interview 2).*

This approach appears to have been adopted in the PD to provide teachers with a pedagogical model that assisted in developing their understanding and delivery of PE. The TGfU approach provided a pedagogical model for teachers to explore the development of game/sport participants' strategic thinking and technical skill learning. As a curriculum model, TGfU appears to have been chosen and delivered by SSS as a medium that would allow teachers to explore student-centred approaches in the teaching of PE, while also assisting teachers to transfer their general pedagogical skills from the classroom to the PE context.

One other subject specific pedagogical model, *Adventure Based Learning* (ABL), was also explored at the very end of the PD programme, for teachers from seven of the ten schools. ABL provided opportunities for teachers to explore alternative ways to foster students' personal and social development, through activities commonly sequenced to include cooperative games, trust building activities, problem solving and decision-making activities. Lead teachers covered ABL in a cluster workshop and then it was covered at staff meetings for other teachers.

The focus of these sessions was how to use ABL to develop interpersonal skills with students, and involved the teachers participating in “a whole range of fun activities” (Pip– Interview 2). Bernice recognised that “we’ve just done one session of adventure-based learning and it’s just not enough. I haven’t had a chance to try it with my class” (Interview 2).

In addition, teachers were exposed to a Movement Education Approach, reflective of the approach modelled in the CIA series of resources titled *Moving in Context*, that were designed to be used by primary school teachers. The use of the movement education approach appeared to support teachers to consider ways to develop fundamental movement skills without aligning them to a specific sport. This shifts the focus of PE away from the development of sports specific skills, such as batting in cricket, or forehand in tennis toward the broader development of fundamental movement skills, such as striking, fielding, rotation, flight, pathways, swinging. All twenty-five teachers were exposed to this approach in staff meetings, and through model lessons and unit plans.

### **DELIVERY OF THE PROFESSIONAL DEVELOPMENT**

Teachers received a maximum of eight days support from the government, through advisers, during 2006. Of the twenty-five teachers interviewed, less than half (ten of the 25 teachers) received the full eight days PD, as these ten had access to lead teacher cluster workshops in addition to the school based PD. The lead teachers and remaining 15 teachers had access to school based professional learning through: staff meetings, the modelling of lessons/activities, the distribution of lesson/unit plans, and most (22 of all 25 teachers) taught a lesson that the adviser observed, and provided feedback on.

### ***Resources: Lesson, Unit and Long-term Plans***

Advisers provided teachers with example lessons and unit plans to help inform the learning. The plans allowed teachers to interact with new material, approaches and contexts in PE, including TGfU and a movement approach using the *Moving in Context* series as a resource. Teachers reported using example plans including units focused on TGfU (either invasion games or tag games), or an aspect of the *Moving in Context* series (balance/statics, rotation, or pathways). The quotes below reflect the experiences of all twenty-five teachers.

*She's [the adviser] given us lots of resources for activities, like that invasion unit... they've got all the questions there for them, like in [the adviser's] plan she had all the questions to ask and stuff (Pip- Interview 2).*

*I've seen that teacher out there and she's following along ... doing the lessons that she's got from [the PD provider], which is really neat (Isobel - Interview 2).*

*The adviser came up with some units of work that had games and things for the things we did last term, and then found a few things for the run, jump, throw unit (Rachel - Interview 2).*

The plans contained detailed instructions for the sequence/structure of the unit/lessons, specific learning intentions linked to 1999 HPE curriculum achievement objectives, activities, assessment, and in some instances, the questions that would need to be asked to develop the learning. In addition, lead teachers were provided with sample school-wide long term plans. These samples were developed nationally, and not developed to reflect the different context, settings, and needs of individual schools and communities.

### **Model Lessons and Activities**

Advisers delivered model lessons to all teachers, and all teachers said it had helped them develop a better understanding of how to teach PE, particularly when the model lessons were drawn from the exemplar lesson/unit plans that advisers provided. All teachers reported finding involvement in the activities at staff meetings (and cluster workshops for those who had access) very enjoyable and valuable as a way for them to learn the 'games' themselves. Below are two teacher comments about the activities, but every teacher made similar comments.

*She did lots of stuff and played games and showed us different activities and we actually did things, so ... they were all things that you could take back and use straight away (Rachel - Interview 2).*

*They've given us a whole lot of different games and that that we can incorporate in our own class, which have been really great (Katie - Interview 2).*

Lead teachers were involved in more games and activities when they attended cluster workshops. Pip, Mere, Rowland and Leigh all commented that during cluster meetings they attended (in different parts of the country) they would always get opportunities to be involved in

“doing the activities”. Below is a comment from Rowland about his experience of the final cluster workshop.

*At the last workshop, there was a plethora of games that we played. And they were really good. Blindfolds and trusts and all that sort of thing and they were bang-bang-bang-bang just straight out, and I thought, this is awesome ‘cos I was enjoying it and it was fun, just being a kid... great to take back to your class and say, “We’re going to do this activity...” (Rowland - Interview 2).*

In these activities, it appears that the teachers played the role of the school-aged learner. This supported them to learn the game and enabled them to apply it soon after with their classes.

In addition, model lessons were also delivered using students from the lead teachers’ classes. In this instance the other 15 teachers were released from their classes to observe these lessons. Fiona’s description of their experiences of the model lessons capture the sentiments of the teachers.

*I wouldn’t have applied it to PE if I hadn’t seen her [the adviser] modelling those lessons and doing a lot of talking with the kids. She did one on balance. And that was ... she took that in a classroom and that was really great. It showed us what you can do in your own classroom (Fiona - Interview 2).*

### **Observation and Feedback**

Teachers who had the opportunity to be observed teaching and receive feedback from the advisers, found this process beneficial. Observation of lessons occurred to different degrees in different settings. There was variation in the number and length of observations that occurred and how much feedback was received. Twenty-one teachers were observed at least once. Below are quotes from five of these 21 teachers that demonstrate the main variations in the teachers’ experience of the observation and feedback process.

*And she’s come out about five or six times and she’s worked with just about everyone in the whole school now ... taking a lesson for them and observing them as well. So that’s helped. She gives you feedback ... written and oral feedback, and feedforward ... so what you can do next (Pip- Interview 2).*

*It would have been perhaps more useful if I’d gone through the DVD with [the adviser], or with somebody else ... rather than Jenny coming out and videoing it and saying to me, ‘That was great’ and then copying it off on a DVD and posting Jude and I our copies (Berta- Interview 2).*

*She came along and watched us and then gave us feedback on our lessons and what we could do next time, and that was really helpful (Jess- Interview 2).*

*It was constructive. There weren't any forms of criticism. It was more ... 'Did you see that child doing that? Isn't that interesting?' and 'I liked the way you did this' and 'Have you tried that?' ... that sort of feedback (Rowland - Interview 2).*

*But I've no idea what she was looking for. It was a waste of time. We went to the hall, had a lesson and then we didn't have any time for the feedback... she didn't watch the lesson ... she interviewed the children (Kath- Interview 2).*

Many teachers had initially felt anxious about being observed but subsequently valued the opportunity to get feedback on their teaching. The evidence provided by teachers, including copies of advisers' feedback forms, indicated that most of the feedback related to pedagogical approaches (quality teaching) and specifically the use of learning intentions, questioning, and reflection. There was no comment about the use of subject specific curricular, content or pedagogical knowledge. A copy of one teacher's feedback form is provided in Appendix E to highlight the focus of the feedback.

## **KNOWLEDGES AND PRACTICES: THE IMPACTS**

This section reports the findings related to the second research question: What were the impacts of the Model 2 PE-PD programme on these teachers' knowledges for teaching PE? The findings are drawn mainly from teacher interviews, with additional data from questionnaire responses, lesson observations, and document analysis, completed after teachers had been involved in the year-long PD programme. This section begins by exploring changes to teachers' subject matter knowledge, before looking at general and subject specific pedagogical changes.

### **CHANGES TO SUBJECT MATTER KNOWLEDGE**

This section explores the shifts in teachers' knowledge of PE subject matter after involvement in Model 2 of the *Physical Activity Initiative* PD programme. As in the pre-PD section, PE content knowledge is not specially identified, but is explored through both the subject matter knowledge and knowledge of pedagogical approaches sections.

## ***The Nature of Physical Education***

The evidence shows that the PD programme encouraged teachers to explore alternative understandings about the nature of PE. In contrast to initial perceptions of PE as primarily physical skill development, sport and games, teachers' post PD comments demonstrated more multifaceted understandings of PE. Post PD, teachers understood the nature of PE to be associated with:

- the development of knowledge and skills associated with movement and sport, including understanding the tactical and some technical aspects of team games;
- physical activity, but not just physical activity; and
- movement as a vehicle to develop interpersonal skills.

Each of these is detailed more broadly below.

### ***Movement Skills and Sport***

Teachers most commonly subscribed, post PD, to the view that a quality PE programme should be grounded in the development of (fundamental) movement skills<sup>6</sup>, and, to a much lesser extent, knowledge associated with team sports and the rules of these.

Interview data highlighted that all twenty-five teachers considered the teaching of fundamental movement (physical) skills as one of the primary foci of PE. This view did not shift from teachers' initial conceptualisation, although their understanding of the link between teaching physical skills and sport was revised. Teacher comments reflect the shift in focus, advocated in the PD that suggested teachers concentrate on developing fundamental movement skills as part of a movement education approach, as opposed to adopting a sport-based activity-orientated approach. This was highlighted by comments such as

*I wouldn't think softball, I would think 'passing and throwing ... and running and loco-motor and balancing and striking and hitting targets and challenging ... greater distances, smaller distances, angles (Hamish- Interview 2).*

*More individual learning ... for skills ... it still would be a lot of skills, but they need those skills before they can play the games. And I don't see PE as much about games [read as sport] any*

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<sup>6</sup> Fundamental Movement Skills is a term used to describe movement skills, such as run, hop, throw, catch, kick, roll, jump, leap, strike, that are used across the expanse of physical activities.

*more, it's more about the actual skill and the reason that you're teaching it (Jess- Interview 2).*

In contrast to initial perceptions of the importance of knowledge of sports, held by all teachers, only four teachers still held to their views that PE should be about providing students with opportunities to play and excel in sport. Changes to the planned school programme raised concerns for one of these teachers, Fiona, as she was unsure how sport was going to be addressed.

*I would like to know where we go from here with teaching them the rudimentaries of sports. Like we used to do a syndicate sports thing where we had hockey, soccer, netball and we've dropped that this year (Fiona - Questionnaire 2).*

Two other teachers, who prior to the PD highlighted their 'expertise' at teaching PE (that is, sport) and had previously been elite sportspeople themselves, still thought that creating top athletes should be a primary goal of a good PE programme. This was most clearly articulated by Rowland, who suggested that

*sometimes I think this focus on general physical skills as opposed to sports skills means that we won't be developing our students to do well in sports. This might have an effect on how well our teams do at the interschool events (Interview 2).*

Only one teacher still perceived the development of sports-based knowledge as a core part of PE. However, she did not appear comfortable with delivering PE, when it was interpreted as sport, because she did not think she possessed the knowledge of sport to be able to deliver it well.

*I'm quite happy teaching gymnastics, I'm quite happy teaching swimming, team sports are still a bit of a nightmare for me because it's not my great interest, I've really got to force myself to learn the rules, learn some skills (Marg - Questionnaire 2).*

### **Physical Education and Physical Activity: What's the Difference?**

Teachers appeared to have been challenged to think about the relationship between physical activity and PE during the PD. However, there was still a lack of clarity over this relationship. Four of the ten lead teachers interviewed, who had been party to all PD opportunities, had begun to differentiate between the subject PE and more general physical activity that occurred during curriculum time. This shift in thinking was evident by comments such as

*It's [fitness] used in a replacement of skill-teaching and movement and all that ... I think they use it. They do it very*

*regularly which is really good, but it tends to be ... 'Well that's our physical education and physical activity', and it kind of limits them really a lot to what they can do (Hamish- Interview 2).*

In contrast there were still teachers (8 out of 25) who continued to perceive any movement opportunity as PE.

*Because of the whole emphasis on PE I have tried to get out there more often. Just if we've got time at the end of the day, just go out for a run ... a bit more often than I used to ... There is a bigger emphasis now on just getting them active, so when we've got time, just go out and do something ... even if it's just a run or amoeba tag or something like that (Marg- Interview 2).*

*So we do the Incy Wincy spider or just movement and that kind of stuff, and like I said before, I wouldn't have classified that as physical activity. To me that's part of the curriculum learning ... or even going out and flying these planes. And they're running and they're getting motivated, and they don't realise ... these are some of the kids that don't like running. But when they're going out throwing their plane and their plane flies away, they run after it before someone else does (Katie- Interview 2).*

For a few other teachers (five of the 25) there was still a lack of clarity over the relationship between physical activity and PE. This was highlighted by comments such as

*Personally, I don't see a difference, I really don't, you could link any activity into something educational, but I know that was one of the things that came up ... the difference between PA and PE (Louise - Interview 2).*

*I see PE more as ... more as the theory part of it, and I see physical activity as the application and the activity of any ... what we're learning about or what I'm teaching children (Linda - Questionnaire 2).*

*Physical activity I see as that. It's a lot more structured than a physical ... like a PE side of things where you might practice some skills but they don't necessarily have to come together to be used in a situation, like a game (Rowland - Interview 2).*

The findings suggest that even after the PD, there is still confusion about what constituted PE. A number of teachers in and across schools continued to lack clarity about the nature of PE in relation to physical activity.

### ***Development of Interpersonal Skills***

The self reported evidence showed that, as a result of the PD, all twenty-five teachers understand that PE is more than the development of movement skills. By its very nature it also has a focus on interpersonal

skills, and in the post-PD interviews, all twenty-five teachers described how they now included these skills in their PE lessons. This challenged teachers to consider the role PE could play in the development of interpersonal skills. This is illustrated by the following two comments that are representative of shifts in understandings by all teachers.

*I think just the approaches we have used have a bigger focus on the relationships and relating to each other cooperating and helping each other, rather than criticising and putting each other down. I see Phys Ed as a really good context, really important curriculum subject for addressing a lot of those interpersonal issues that happen in our school. I do see that has happened... a lot of them are individuals with huge problems, had to work at it, and I say PE is a great way to do it (Jade- Interview 2).*

*I guess my perception was that they [social skills] weren't PE ... and that they to me were social skills. But I mean it is the same ... it's the C strand in the document, so it's all part of PE, but I guess I never thought to emphasise and teach those skills as much as I do now (Sally- Interview 2).*

Some teachers had already seen the spin-offs of broadening their concept of the nature of PE, to include interpersonal skills, and incorporating them into their lessons. For example, Kim and Patricia had seen changes in other parts of the school's day.

*When I'm on playground duty, I see the children are speaking up when their wee games aren't working and coming out with suggestions, as we do in that PE situation (Kim- Interview 2).*

*Kids like the change, they hate it when they fight, because there is no one else to go and play with, so they have to get along, which is quite a skill, and they know when it is working well and when its not. Were active at break times, but not always all together and we wanted them to mix up, with the girls as well. Which meant the girls have got a bit more active. Because before if the boys choose to play cricket then the girls wouldn't want to get involved... now they are more supportive and play tennis etc together (Patricia - Interview 2).*

It appeared that the PD challenged teachers to revisit their initial understandings of the nature of PE. However, still appeared confused about what PE is and, therefore, the purposes it serves.

### ***The Purpose of Physical Education***

Changes to teachers' understandings of the nature of PE had flow-on effects in relation to their knowledge of the purposes of PE. Teachers had originally perceived PE to be unlike the "other" subjects they taught. The PD had led nearly two thirds (15 of the 25) of the teachers to identify an

important place for PE in their programmes as it addressed a wider range of purposes than they had identified prior to the PD. Teachers indicated that the PD had challenged them to consider other purposes beyond fitness, fun, and learning to play sports. Across all ten schools, teachers were articulating purposes for PE that were focused on social, physical, and mental/emotional outcomes.

Fourteen teachers interviewed continued to see physical benefits, such as providing opportunities for students to develop their fitness and become healthy people as a central purpose of PE. As well as seeing the development of interpersonal skills in PE, Kim highlighted “PE is about getting them [students] moving, being fit, being healthy people, and trying new things” (Interview 2).

Of the original 19 teachers who recognised the benefit for students’ mental health and cognitive abilities, all continued to maintain this view, although only three were tied to this as a core purpose for doing PE during their school day. It would appear that the purpose of PE for these teachers fell into the break from more academic classroom subjects. As Kath expressed “all kids need their blood to be pumping so that their oxygen’s there for their brain to learn” (Interview 2).

Other teachers (60%) had recognised that they could achieve a range of positive social outcomes if they changed the way they conceptualised and delivered PE. Of these fifteen, six teachers suggested that for them the major purpose of PE, post-PD, was the development of students’ interpersonal skills. This was highlighted in comments such as

*I can see that they’ve changed in their co-operation and working as a team and that together ... we’ve done that for the start and towards the end of last term as well ... so they’ve definitely changed. So they’re talking about things, like they’ve got to talk to each other and make sure everyone’s doing the right thing. That side I’ve definitely seen a change in. With the skills ... well ... I haven’t really been doing the throwing and catching like we used to do any more, we do other stuff like social skills stuff (Pip– Interview 2).*

A few teachers (20%) commented explicitly about the improvement they had seen in students’ sense of themselves as participants in PE as a result of the social skills focus in their PE lessons. One example of this was provided during the observation of Ruby’s lesson. During the lesson Ruby pointed out a student (Tui) was directing the game and appeared very self-assured in her role. Ruby explained how previously Tui had

always had notes to get out of PE, and never wanted to be involved, so was quiet when she did have to participate. In the interview, post the observation Ruby, continued to explore the change in Tui's sense of self.

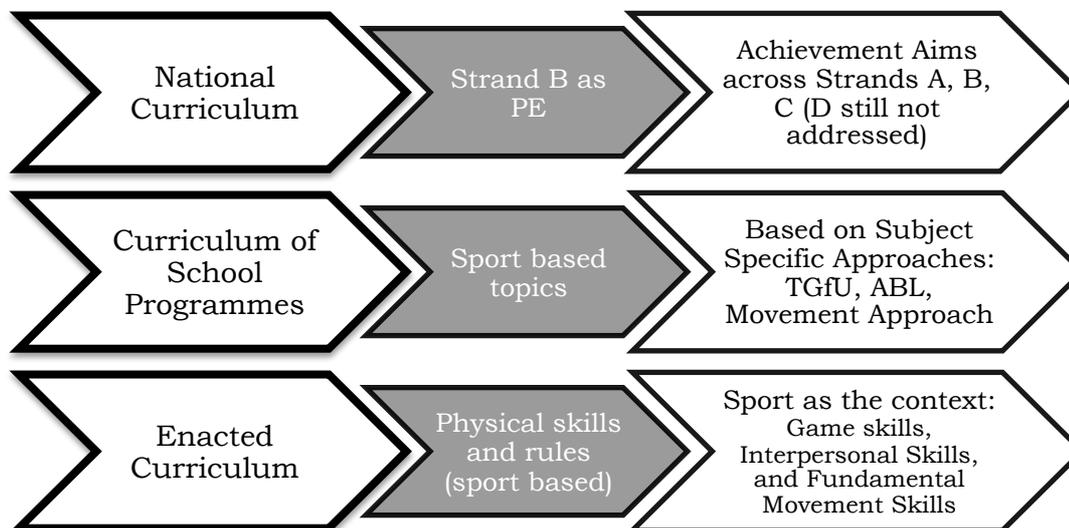
*I just thought, 'Wow!' I wasn't sure whether it was a positive. I thought, 'Oh my gosh, I've never heard her yell out so much', you know what I mean, and directing the game and I thought, 'Well ... That was amazing. I mean she just had this hidden ability before and it was there. And I thought, 'Oh my goodness. That's incredible!' And she's holding the ball and she's directing play, you know, she's taken over this leadership role.*

The findings indicate that the PD had assisted some teachers to recognise broader purposes and instrumental uses for PE. With the support of the advisers it would appear that both teachers and students have benefited from this change in focus.

### **Curriculum Knowledge**

Post-PD there were some shifts to teachers' understandings of the curriculum of PE. These are represented in Figure 5, and are explored in more detail in the following section.

Figure 5: Changes in knowledges of curriculum of PE



Note: The grey boxes represent pre-PD knowledges.

### **National Curriculum**

There appeared to be a small shift in teachers' understanding of the national curriculum. The evidence emphasises that teachers did not perceive the curriculum to have been covered in the PD. However, the detailing of more achievement objectives and other curriculum links on the lesson and unit plans provided and modelled, and the use of the CIA

books, appeared to support teachers to explore broadening their knowledge of the HPE curriculum. Patricia suggested that “some major things have changed, there’s different teaching approaches, and we are not concentrating on Strand B – we are doing a more holistic programme” (Interview 2).

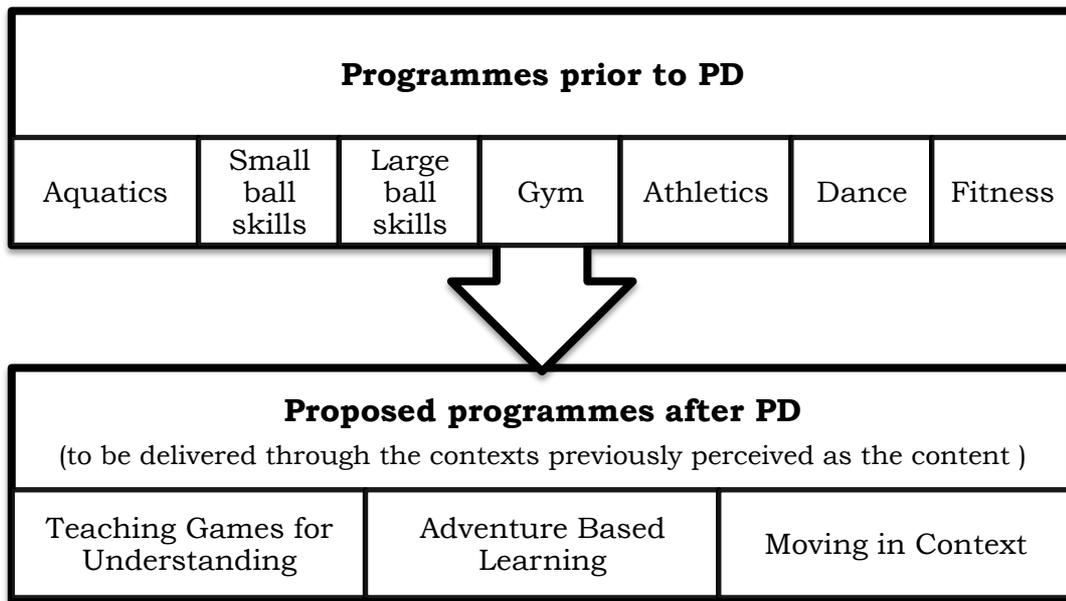
The majority of teachers (60%) were able to recognise that they could address more than Strand B – Movement Concepts and Motor Skills, in their PE programme. The use of ABL and TGfU, with their built-in focus on interpersonal skills, appears to have provided encouragement for these teachers to explore Strand C – Relationships with Others. In addition, a few lead teachers (six of the 25) had started to develop an understanding of the concept of learning in, through and about movement. In developing the school-wide goals, Leigh had encouraged staff to “get away from must cover ‘x’ strands and report on ‘y’ strand. As we will cover all four strands if we do in, through, about” (Taken from Leigh’s brainstorming document for staff).

### ***Curriculum of School Programmes***

The prevailing view of school curriculum held by teachers prior to PD (activity-orientated, sport/physical activity based) appeared to have been replaced in the way the ten lead teachers (who were responsible for developing the long term plan) came to conceptualise the content of the school programme. Both during interviews and in the documents, teachers demonstrated a shift in understanding. Lead teachers now described what had once been perceived as the content, as the context through which they taught the content.

After the PD the content appeared to be categorised according to subject specific approaches (curriculum models) or example units that the teachers had explored throughout the PD. The move to incorporate subject specific pedagogical approaches such as, ABL, TGfU and the thematic understanding embedded in a movement education approach into the repertoire of PE teaching, extended teachers’ understanding of what learning can occur in a PE programme, and offered a perspective on the content. The shifts in knowledge of the content of school programmes are outlined in the Figure 6.

Figure 6: Changes in curriculum of primary school PE programmes



In the time period of the research, teachers continued to teach the original school programme, while endeavouring to trial some new approaches, and start work on draft long-term plans.

#### *Long-term plans*

Interviews with lead teachers, who were responsible for developing long terms plans, indicated that their schools planned to adopt alternative programmes in the year following the PD. Lead teachers, Marg, Berta, Sally, and Bernie, (all receiving PD from the same advisers) had draft plans developed for their school. It appears from lead teacher comments (represented by two teachers below) that the process for designing the long term-plan was the same in each school.

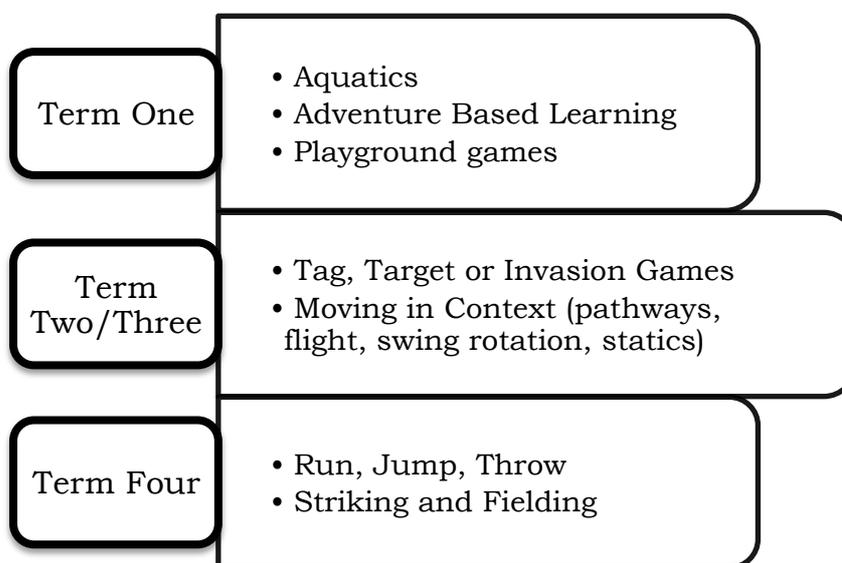
*We had a release day and we planned this amazing school-wide, long-term plan for every level, for two years! Well that was the four of us with [the adviser] and just picking up the bits that we've done on the course and fitting it in a two-year cyclic model, including all the school-wide things that are happening as well ... athletics, swimming, cross-country. It's got five or six week blocks each term focusing on different contexts, and underlining all that is the Teaching Games for Understanding. So I'm really pleased with it (Bernice – Interview 2).*

*The long-term plan's actually already written, that's part of the PD we did with [the adviser]. So we've shaped it into the four terms...So we've divided ... we looked at our school year as all the school things that we have ... events and functions that are related around zone things, and then Christchurch ... big things. So that we've incorporated those events in the programme that we've written. And then we've ... we've made the progressions*

*from junior to senior. So like in Term One, there'll always be an aquatics unit and one year there'll be a playground unit and another there'll be an adventure based learning unit. And so what we do at Year 1 and 2 progresses to the next stage in the Year 3, 4 section of it ... so that hopefully we're building on, every year, skills that they've already come from them (Sally-Interview 2).*

While it would be expected that the process for planning may have been the same, it was surprising given the varied school contexts that the draft long-term plan for each of the three schools was identical. The process by which this happened was not clear from data. However, the same adviser supported all three schools and this may have contributed to the identical plans. Across the levels of schooling the same headings, or a combination of the same headings were used in each term, however the focus and context varied. For example: the Games unit in Term two Year 1/2 looked at “tag invasion games”, while in Year 3/4 students looked at Target or Invasion Games. These headings are identified in Figure 7, as they were used in the plans provided by teachers in three separate schools. A copy of the draft plan, which three schools intended to adopt (and a exact replica of the one provided in the PD) is attached in Appendix F.

Figure 7: Titles of units in draft long-term plans



In addition, those schools that had drafted a long-term plan had opted to reduce the focus of school and interschool events in their programme, as had been done in the provided model plan. The timing, placement and content of many of the units focused on in the long-term plan still appeared to be designed to provide opportunities for students to develop

knowledge and skills to enable them to participate in interschool events, e.g. aquatics at the beginning of the year. However, the interschool events did not appear to hold the same status as they previously had in the content of the school programme.

Lead teachers at the seven schools that had yet to develop their long-term plan all commented that their school programme would probably look different in the year following the PD, as a result of their learning. While the lead teachers at these schools had hoped for opportunities to work with advisers to develop the plan, they had been encouraged to develop their own long-term plan based on their student needs.

*We pose the questions ... what do our children need to learn in, through and about PE? Get all these things ... what knowledge, understanding, skills they need and from these we choose our school-wide foci. ... I think they're more social skills and problem solving and critical thinking, risk taking and ... And so we [now including the rest of the staff] pick up those foci and then we brainstormed context ... and they can be the traditional contexts like swimming sports, cross-country, winter sports, athletics or triathlon, but we use those contexts to address that content. So we as a staff set the school-wide learning goals and the terms in which they're taught, we list the context, the teachers select one and they can be influenced by the co-curricular events (Leigh – Interview 2).*

Across the seven schools that were still in the process of developing the content for their long-term plan, all teachers suggested that they would be using the units they had received from the advisers as part of their PD programme, as the major focus for the content of the school programme. This suggests that for many teachers in these schools, TGfU, ABL and Moving in Context would be central to their long-term plan, as it was in the schools that had already developed their plan.

### ***Taught Curriculum***

The content of teachers' lessons changed in line with the content of the model and sample lessons that they had been provided with in the PD. Initially lessons were primarily focused on the development of physical skills, and knowledge (rules and playing) associated with specific sports and physical activities. The wide range of learning intentions addressed in the trialled units had challenged teachers to explore how they could broaden the content (that is the information or skills to be learnt in the lesson) their PE lessons, without making significant changes to the contexts that they currently used. Teachers reported that they changed

the content of their lessons, as well as the structure (as indicated through the findings relating to general pedagogical approaches detailed in the following section). Teachers had begun to deliver lesson content around a broader range of learning intentions, including:

- a more thematic approach to movement, as opposed to sports specific movement education;
- decision-making, problem-solving, and thinking skills;
- interpersonal skills, such as cooperation and caring for others; and
- tactical game understanding.

However, changes to lesson content were also very reflective of the model lessons with teachers relying heavily on these to teach PE. This was evidenced as teachers commented that

*They [the advisers] did a lesson with us and I'm going to move on to that tomorrow, I've got all my cards ready to do the balancing activities just like they did (Kath – Interview 2).*

*I've seen that teacher out there and she's following along trying to ... getting ... doing the lessons that she's got from Team Solutions, which is really neat (Isobel – Interview 2).*

There was little evidence to indicate that teachers had been provided with the opportunities to develop their own movement skills, or understandings of detailed content for developing interpersonal skills, and therefore they still appeared to have limited skills/understandings to change the content of their own lessons. This is reflected in teachers' requests for further PD. Of the twenty-five teachers who responded to the final questionnaire, twenty-one felt that they would benefit from more ideas for activities. The two comments below are reflective of responses from all who wanted more activities ideas.

*We need someone in the school to make sure that people have got access to lots of resources. Because I think perhaps ... I don't mean physical resources like the things you use ... I mean resources of ideas, of ways that you can teach certain skills and games and activities and pieces of equipment that you could use. So those sorts of things are helpful. And I think probably some sort of PD, even if it was once a term, some sort of session with someone like [an adviser] to give you ideas for ... what you could use for your next thing that you're going to work on. Because that really helped ... that made it easy ... because if you're fossicking around trying to find things, it's hard (Rachel – Interview 2).*

*I'd like to actually have more PD. I'd like to because ... personally I don't have a huge repertoire of PE activities and all that. I get a lot of mine from ... well the few resources we have in there [the resource room], or on TKI. Yeah I go on that ... it would be nice to have a lot more though. It always pays to have more than less and makes coming up with ideas for lessons so much easier (Jeanette – Interview 2).*

It is evident that there had been changes to teachers' theoretical knowledge of PE curriculum at all levels, as a result of the PD they received. However, teachers' comments suggest that they would appreciate and benefit from further opportunities to extend their curriculum knowledge.

### **CHANGES TO GENERAL PEDAGOGICAL APPROACHES**

More than anything teachers talked about how the PD had resulted in changes to their pedagogical approaches, their style of teaching and the way they taught. Over half of those interviewed suggested that the focus on general pedagogical knowledge as part of their PD programme made them realise that PE could be taught using many of the same “quality teaching methodologies” (Jade – Interview 2) and practices that they used in any other curriculum area. Teachers suggested that they had “taken a lot on board about quality teaching practice and applying it to PE” (Leigh – Interview 2). A third of the teachers reported that it was the implementation of these “quality teaching practices” in their PE lessons that had been the biggest change they had made as a result of the PD.

One teacher, Sally, suggested... “It's actually a style of teaching rather than content change, for me, that's been the most effective.” While Marg stated “Music's the worst. PE would be second worst ... it's, ‘Oh my god I've got to do that!’ Yeah, I mean if you just put all that aside and think, ‘What can I do?’ and just treat it [PE] as another subject” (Interview 2). For those teachers that had begun to reconceptualise their PE pedagogical strategies, there appeared to be a sense that their “teaching in other curriculum areas has transferred to PE in a positive way. I've done that type of thing [learning intentions etc] with other areas, but not with PE. I always thought that it didn't have to be in PE... so now the PE has come in with the others rather than the other way round” (Culhane – Interview 2). Consistent with the content of the PD, all teachers reported how they were now using classroom based general pedagogical strategies, including more explicit learning intentions, a wider range of questioning

and ability grouping in their PE lessons. Each of these general pedagogical changes is explored in more detail below. While these are differentiated for the purposes of reporting, the teachers used these in complex combinations during their PE lessons.

### ***Learning Intentions***

All interviewed teachers reported that, as a result of the PD, they had begun to make learning intentions more explicit to the students for each PE lesson, something they were accustomed to doing in classroom-based subjects. Teachers reported using learning intentions for “making it clear, with the children, about where you see the lesson going and then where they feel it should go” (Kim – Interview 2), for reflection on the learning that occurred during the lesson, and for examination of the next steps. While some teachers specified the learning intentions, others had begun to go further and negotiate the learning intentions with their students. Teachers reported shared learning intentions with their students in a variety of ways. Some displayed learning intentions on charts, while others had taken to using a ‘PE learning book’ or ‘thinking book’. Some descriptions of the sharing process are outlined below.

*One change is having a learning book with learning intentions, and how we know whether we have achieved this, putting it into the children having more of a voice about how we are going to go about it, or how we are going to ... For example, I did that games approach, and it came from them that we needed to improve our throwing and catching and running, and previously I would have gone out and said, look we are going to learn to throw today (Jade – Interview 2).*

*We haven't always made a point, I don't think, of sharing them [learning intentions] with children all the time, so they actually know why they're doing something and what they're learning. I would have never, ever kept a book before ... Well it is a PE thinking book, but it's actually more ... this one's more a reflection book because we've kind of filled it in afterwards, rather than as we've gone (Berta – Interview 2).*

### ***Limitations in the Development and Use of Learning Intentions***

Teachers' ability to identify appropriate learning intentions and then develop activities to allow students to achieve the learning intentions appeared to be dependent on their PE content knowledge and how it related to their understanding of student needs and development. For example, Tina felt extremely confident about her ability to meet the learning needs of her new entrant/year one students through the design

of appropriate learning intentions and development of activities. In her interview, Tina indicated that the adviser was very happy with her teaching and understanding of PE, “and the only thing she suggested [she] change was to have a visual so the students could see the learning intentions, and [she] have taken that on board” (Tina). As a result, Tina had begun displaying her learning intentions for the unit on the classroom wall and writing the learning intentions for the lesson on a laminated card that she could take outside. The learning intentions, as observed on the classroom whiteboard, for her unit on large ball skills with her new entrant/year one class were:

We are learning to:

- throw and catch a basketball, netball, rugby ball and tennis ball correctly;
- use the skills correctly to play a game cooperatively with others.

These unit intentions were broken down further to narrow the focus for the lesson. The lesson intentions were: We are learning to practice our netball skills, and play netball correctly. The following details the lesson that followed when Tina took her new entrant/year ones out for PE that day. This description is taken from the field notes recorded during the observation.

- In the classroom Tina shared the learning intentions, without outlining or developing success criteria with students.
- Once at the court, having moved down in two orderly lines, the students ran around the netball court so they could get warmed up.
- For the next five minutes the students played tunnel ball. This is where the students lined up one behind another making a tunnel with their legs. The person at the front rolled the ball through the tunnel, where the back person retrieved it and ran to the front to repeat the process.
- Tina then split the class into two ‘even’ teams (about eight in each team), and told them the rules and modifications for the game of netball they were about to play. Tina emphasised the no contact and no stepping rules and made the following changes to the traditional game:
  - removing the three zones, so students could go over the whole court;
  - having no goal posts. Students scored by passing the ball to a team mate over the end line, like you would in American football;
- Tina asked students if they understood what they had to do (a closed question). The game began.

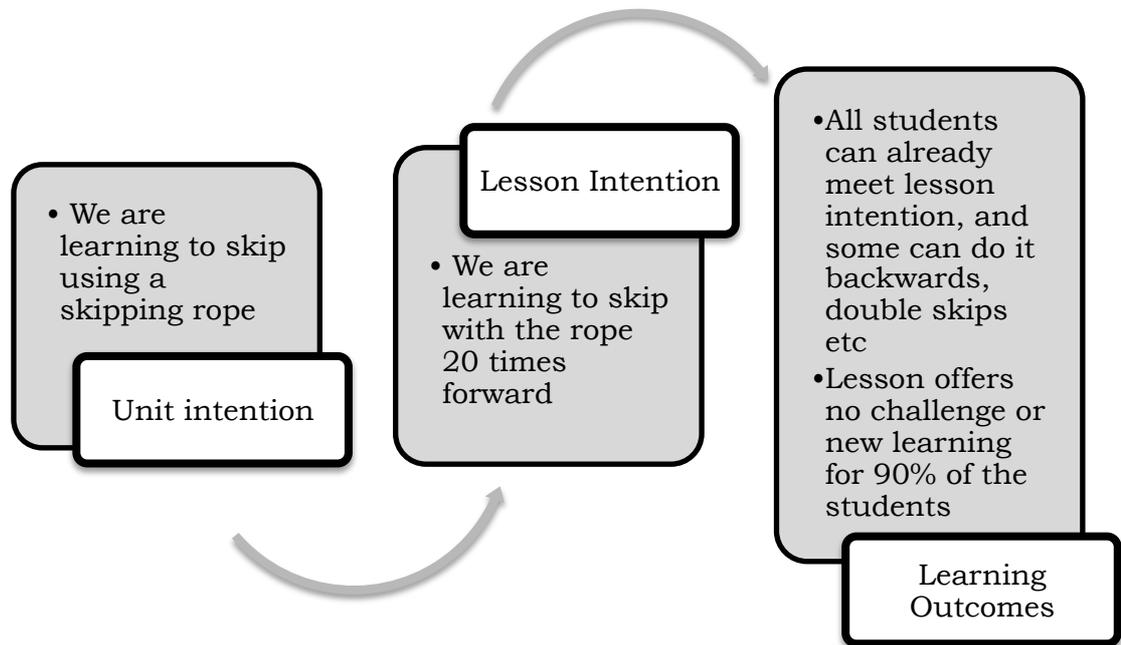
- Tina, now acting as the referee, blew the whistle for infringements when the five and six year olds stepped, contacted another player, or the ball went out.
- Most of the students appeared to struggle. They were finding it hard to handle the adult sized netball, had difficulty with chest passing, were barely able to complete any sort of pass, and were constantly being 'pulled up' for the stepping and contact infringements. The triplets who had started school 3 days earlier spent the whole game walking around in a dazed like state, with what appeared to be little idea of what is going on.
- The game lasted for 14 mins, before the teacher decided the lesson was over, and the class headed back inside and started packing up for the end of the day.

The teachers in Tina's school were assisted with their planning and development of learning intentions through the use of the ETAP software (a computer programme that allows teachers to click curriculum learning areas, such as PE, and then select achievement objectives for their lessons/units). Tina suggested that in ETAP "the criteria are already there, you just key it in, or put a tick there and that comes up and you can actually ... it's right in front of you so when you're writing your SLO [Specific Learning Outcome], you don't have to keep paper. You don't have to flick through the document [curriculum] ...It's actually there so that in the next box under it you're actually typing out your SLO." It would appear that while the use of ETAP made the planning processes easier for teacher such as Tina, it did not guarantee that planning was appropriate to meet the learning needs of the students.

In contrast to Tina's overly ambitious lesson, Jeanette provides an example of learning intentions that do not appear to challenge students, or meet their learning needs. Figure 8 outlines the unit and lessons intentions and learning outcomes for one of Jeanette's lessons, observed by the researcher.

In this lesson, for her Year 3/4 class, Jeanette focused on students learning to skip forward 20 times while spinning the rope. A lesson observation and report back from Jeanette highlighted that she realised as soon as the lesson started that her entire class could already skip 20 times forward, and were capable of skipping with a rope in a whole range of ways. In recognising that the learning intentions were at the wrong level for her students, Jeanette commented... "Well that means that I've done it too easy and they're all going to get ... 'exceeded'". This realisation did not deter Jeanette from continuing with the unit as planned, instead she had decided that the students would just get through it quicker.

Figure 8: Jeanette's learning intentions



Jeanette did recognise that she was not always sure what learning was appropriate for her students, and did not trust her own ability to judge, so had sought advice. She commented

*I wasn't sure when I was writing my units I asked what level I should stick to. They [other staff and advisers] say, 'Well keep them at 2, because the children that are coming through from there are the more able children and then ... And so I sort of ... 'Okay they've got more teaching experience than me' and so I say, 'Okay, I'll give that a go', and so far so good. Yeah, Level 2, I'll just keep it at the same level and as far as those ... I try and keep the learning intentions as simple as possible, and as ... what's the word ... feasible as possible (Jeanette – Interview 2).*

### **Copying Learning Intentions**

For other teachers who were less confident with their own understanding, the resources and model lessons provided by the advisers had offered examples of appropriate learning intentions that teachers took straight into the classroom. For example, Culhane (Interview 2) described how she used the examples provided to develop her learning intentions.

*I mean I always did PE but you know I wouldn't tell the children about the learning intention, I'd sort of expect them to know. But now we talk about the learning intention and then we'd go off and we'd do things and I tell them why we're doing it ... that book that we have. 'Movement in Action' or 'Movement in*

*Context' ... that looks really good because it's all there. Why reinvent the wheel. It tells you all the learning intentions. It tells you exactly, step by step, what to do... And some of those plans and things that [the adviser] has given us, they're really good, because it tells you exactly why you're doing it, what skill you're looking at, the learning intention, even some of the success criteria.*

Example unit and lesson plans, and the lessons modelled were not presented for every year level taught in the school. This did not appear to prevent teachers from using the example plans for their own classes, even when the plan was not designed for their year level. For example, Linda had shared the *Invasion Games* unit plan, designed for Year 5/6, with the whole staff, as she outlines below.

*I gave every teacher the Invasion unit and the feedback a month later was just awesome. 'Oh this Invasion unit's really good! I played this game here and this game here and we did this here and they learnt this skill here'. And because the learning intentions outlined ... you know they ... 'We talked about this first and then we got out there and we did that activity there'. I said, 'Oh that's good' and that was good to hear, and I gave them that in Term 2. So that was good to see ... I gave them that resource and they were actually all using it (Interview 2).*

### **Learning or Regurgitating Learning Intentions**

While all teachers continued to share learning intentions, some questioned the purpose and the success of this. Jade commented, "if you keep going WAL [We are learning] about such and such today and then go on and do it, they just get sick of hearing it (Interview 2). Others felt that there were times when students just "regurgitated" the learning intentions in the reflection part of the lesson, without really having learnt anything. Pip (Interview 2) highlighted that she would "ask them what they're learning today and they can say, 'I've learnt how to blah, blah, blah'". However, she was concerned that at times they just "read back what I have written on the board as our learning intentions for the day... I am not always sure they have achieved the success criteria or whether they just think they have to tell me the right answer [to the question, what have you learnt in PE today]... that being what's written on the board."

Jess was also concerned about what her students were learning from the sharing of learning intentions process. She commented that she had a "big insight" when "the adviser did an interview with the kids and they said, 'Oh the teacher told us, that's why we're learning it, because the

teacher told us' and I was like, 'Oh, but that's not why I'm doing it. I'm not doing it to tell them to do something'" (Interview 2). As a result she had changed the way she shared learning intentions and reflected on them, so that students had to "do more thinking about their learning and not just say they are learning it because I told them they were".

In contrast, Kath was concerned when her students were not able to tell the adviser what they were learning. She commented that "[the adviser] asked why they were learning to dribble the ball and half of them didn't know ... which seems funny because we always do a pre-session before we go. It's clear. The kids know what they're learning" (Interview 2).

The majority of teachers interviewed (21 out of 25) felt that the use of learning intentions had assisted them and their students to understand what they were learning, and where they needed to head next. The use of thinking/learning books, and encouraging students to reflect on the learning was a practice that teachers intended to continue with.

*When they do write out their reflective statements, it starts off with their LI. If they have achieved it, and how did they achieve it and ... Do you think you were successful? I think I was successful because ...' yeah, and that's all that matters to me. If they think they're successful, where to next? (Louise – Interview 2).*

*I started up a little book on ... I can't remember what it's called now ... a little book where we talked about what we had done and what we were learning ... and yeah we did that. So that's one of the changes ... I do a little bit more focus on talking about it, and just directing the kids a little bit about more what we're doing and where we are going (Isobel – Interview 2).*

While all teachers had started to use learning intentions in their PE classes, the findings highlight that many teachers had difficulty independently developing appropriate learning intentions for their classes.

### **Questioning**

Throughout the staff meetings and in the modelled lessons and example plans, teachers were encouraged to incorporate questioning into their PE lessons. Included in this focus was how to ask open questions as part of a guided discovery approach. Teachers recognised that the questioning skills they used in other curriculum areas could be transferred to the PE setting. Across all 22 lesson observations teachers endeavoured to demonstrate the use of questioning, and recognised that this was a new

practice for them. This offered teachers confirmation that the general pedagogical skills they already possessed were also useful for PE, as is indicated by the comments below.

*From time to time you're going to have to stop and bring it back for the questioning ... Therefore they [the students], in turn, are looking at different and deeper thought processes. They're not just doing it because it's a fun activity. They're not just doing it because it's time out of the class. They're actually realising now that there is ... like maths or whatever, like English ... there's a conversation, there's a deeper thought process to it as they go along (Rowland – Interview 2).*

*I've found that ... now that I know the types of questions and things to ask I can do that. And believe it, I didn't know before how to quite relate those things to a PE programme, whereas you'd do them probably in topic or language and things, but it's quite good that they relate now to PE. So it is, it's much better (Mere – Interview 2).*

While the use of questioning was encouraged in the PD as part of quality teaching practice, it was also facilitated through the adoption of the TGfU approach (to be discussed later). The adoption of questioning as an important part of pedagogical strategies for PE changed teachers professionally and personally, transformed the way they taught lessons, and challenged their ability to ask the 'right' questions.

### **Professional and Personal Change**

The use of questioning changed teachers' personal and professional approach to teaching PE. It had allowed teachers to learn something about themselves as teachers. For example, Pip talked about how questioning had meant, "getting them [students] to think, instead of me telling them. And I used to answer their questions. I'd asked them a question and answered it myself ... But I've got to give them time to answer" (Interview 2). The teachers most challenged by process of using questioning in PE fell into two categories:

a) Those four teachers who were sports coaches and perceived themselves to be 'experts' in their knowledge of physical activity. The struggles for these four teachers were evident in Ruby's comment below.

*I had to sort of adopt ... I had to change ... my attitude as well. 'Cos it was all so ... I came from being a coach, you know as well ... doing a lot of coaching. So therefore, I said, I dictated, I gave the directions ... now I don't have to. But I just find I facilitate more than anything else. I'm the overseer. They have to make choices and if I think ... I'll put my input and say, 'Okay I*

*noticed yesterday ...' ... like Samson had been there for seven goals, so I might say to them, 'Who would like to have a turn? How did you decide?' (Interview 2).*

b) Those who used a teacher directed approach in their teaching of PE. The comments of Fiona and Hamish were indicative of 15 of the 25 teachers.

*I think it's been quite a change in thinking for me because it was always very teacher directed, and now it's very much getting them back, 'what worked? What didn't work? What were your strategies?' (Fiona – Interview 2).*

*I find it [using questioning] quite strained because I've got this image still in my head that ... just get on and do it, just do the drills. So it's quite ... I find it quite weird, quite phoney at times ... and ... I 'm just worried that I bore them. It's just not natural because I don't ... I'm probably quite a directive teacher (Hamish – Interview 2).*

### **Changing Lesson Structure**

Teachers also felt that their use of questions had changed the structure of their lessons and enhanced student learning. While the teachers indicated that their lessons previously had centred on warm-up, skill teaching, game, warm-down, they now all recognised that their lessons were more student focused and directed at enhancing student understanding. The two quotes below are representative of how all the teachers talked about the changes to their lesson structure

*You know they've gotta really stop and think, 'Well you know, what we're doing here? What could we do better?' ... that sort of thing. Yeah, I think also in a PE lesson, before I'd sort of go flat tack for the whole half an hour or so, whereas now we will stop and reflect on 'How we could do this better?' or 'How could we change this game?' (Bronwyn – Interview 2).*

*There's a lot more questioning because, instead of just going out and doing it, there's no purpose to it if they can't actually get the point of why we're there. And you know, I ... with the staying in your own lane, 'Well what happens if you don't?' 'Oh someone could get hurt' ... and they're thinking it through more. So I'm thinking it through and so are they (Jess – Interview 2).*

### **The Challenge of Getting Questioning Right**

While teachers' comments suggest that they all found the skill of questioning easy to adapt from their experiences in the classroom, the ability to ask the 'right' questions, or structure questioning to provide feedback/feedforward seemed varied. For some of the teachers (seven of the 25) having the questions provided, with resources supplied by the

advisers, assisted them in overcoming difficulties in developing appropriate questions. Louise suggested that “the thinking, the questioning ... I really like the way that she’s given us the resources and we’ve got questions there” (Interview 2). While Pip recognised that she was “more confident, because I guess I’ve got all the questions, like in her [the adviser’s] plan she had all the questions to ask and stuff” (Interview 2).

Two lead teachers had also identified the difficulties some of their peers had had with developing questions, so had planned to write the questions for the teachers in newly developed/developing unit and lesson plans, as Sally outlines below.

*So we’re actually going to put teaching units in there and be very specific about what we talk ... as the format for lessons ... you know with the questioning and the group huddles and all those kinds of things, so that the technique is going right through regardless of the content (Sally – Interview 2).*

A few teachers (four of the 22 observed) commented that they felt confident to develop questions on the spot during lessons, particularly in relation to the TGfU approach and interpersonal skills. As Kim highlighted in the post lesson observation interview, outlined in the quote below, the PD had challenged her to evolve her questioning, and positive student responses had encouraged her to keep them engaging.

*How do I fit in as a team? What could I do to change my behaviour to make the game work better? You know, all those leading questions, which we’re just putting in and the kids are answering... I can hear their answers are more meatier, they’ve got more substance to them. So if I direct my questioning better, they give better answers... They’re gaining something from it because they’re adapting their game. We’re stopping. We’re saying, ‘What worked well? Oh great, it’s working, okay let’s change one thing... you put that ownership back on the child (Kim – Interview 2).*

While all teachers identified that they were using questioning more, it was not always evident in the lesson observations that teachers were clear about how to use questions to develop student understanding. The 22 lesson observations highlighted how many teachers (18 of the 22) relied heavily on the questions provided in the model lessons and lesson examples provided by the adviser, and struggled to develop their own questions and questioning sequences. This appeared to limit teachers’

ability to personalise the learning experience, and meet the needs of their students. For example:

- Kath used the “Can you....” questions from those listed in the balance resource provided by the adviser. Her questioning sequenced focused on asking students:

*Can you balance...? On one/two/three parts of your body; at different levels etc. Followed by What sort of things did you do? Which sort of balance was easy to hold for three seconds? Which was the most supportive? To which students demonstrated their actions (field notes from lesson observation)*

- Marg struggled with developing questions when she was challenged to run a lesson, on High Jump, without an adviser-developed example to base her practice on. As a result Marg was limited to asking questions that were linked to organisation as opposed to skill development. E.g. (field notes from lesson observation)

*Who thinks they can jump the bar at this height? If you don't think you can you need to work with the group jumping on to the crash mat.*

- Rachel struggled with developing questions relating to throwing for distance, as her students struggled to improve their practice. Rachel initially used a question provided as an example in the PD, and then appeared to have difficulty developing the guided questioning sequence, to enhance learning students understanding of how to throw for distance. What follows is an outline of the questioning sequence that occurred in the lesson that was observed as part of the research process.

*Initial question: How will you achieve maximum distance when throwing the ball? Student responses: Throw it harder; Take a longer run up. Teacher response: Good answers. Lets go and see if a longer run up, and trying to throw it harder makes a difference. After some more practice the class comes back together and the teacher asks: How did that go?*

Outlined below is a questioning sequence from Culhane's lesson. This observation highlighted how Culhane was using more questioning in her lesson, however in this instance, more questioning did not correspond to students having time to answer, or explore answers. The example below details the questioning process Culhane used in relation to a lesson focused on bean-bag throwing.

- The students had just finished throwing and catching the bean-bag in pairs. One threw it up the other had to catch it. Culhane gathered them all in and asked the following questions:

*What could you do to make it [no indication of what it was] different? You could not use your hands [Culhane answered the question for the students]. What does the person throwing have to do to help you catch it on your head?*

- Without providing the students with any opportunity to answer or discuss either question, Culhane sent them straight back to the activity, with them trying to catch the bean-bag on their heads.
- At the end of the activity, when they were all gathered in, Culhane talked to the students about the learning, using what appeared to be a list of questions:

*How hard did you find that? If your partner threw it more softly would it be easier? How could you stop the bean-bag from falling off your head? [Again no opportunity for student response].*

- The lesson then finished without any opportunity for the students to return to the activity and explore possible answers to the questions.

The example from Culhane's practice was reflective of patterns of questioning used by the majority of teachers observed (18 of the 22). The lesson observations highlighted that, while teachers were engaging in more questioning techniques as part of their PE lessons, limited PE content knowledge appeared to restrict the usefulness of questioning as a pedagogical strategy in PE.

### ***Ability Grouping***

It appeared that the PD providers recommended teachers explore ability grouping as a strategy in their PE lessons. The use of ability grouping was transferred from the classroom setting into PE practices. As Jess highlighted in her second interview "it [PE] is the same ... like maths. They're not all at the same, so we shouldn't be expected to be teaching them all at the same level ... so do ability groups."

All twenty-five teachers talked about adopting ability grouping in their PE lessons. With average class sizes of twenty-six students, teachers had found ability grouping beneficial for their students, with students

appearing more motivated and willing to participate. Teachers also recognised the benefits for student learning, when of ability groups were used. For example Mere suggested

*I do value that the children who weren't achieving in PE, that they are doing a lot better, and they're not picking daisies and hanging around down there on the outskirts of the field like they used to ... and talking and ... because they're smaller groups they can't do that. They have to be involved which is good. And that was the main thing I think that I found hard before, is like coping with those children. 'Cos we'd get the competitive children that always want to play, but then they argue with each other. So fair play's come in a lot more too (Interview 2).*

All teachers, except Rowland, talked about how less able students felt less threatened when they had opportunities to participate with their peers of a similar ability (and attitude), and this had enhanced their motivation to engage, and therefore their learning in PE. The two quotes below highlight positives of ability grouping for Jade and Marg are representative of comments from all the teachers, except Rowland whose differing experiences are detailed later in this section.

*I've seen a real shift in those less able children, they are a lot more involved and have done quite a bit of small group work or pairs and I think that suited those children. They lack the confidence to do any PE in front of the group, lack confidence cause they felt they couldn't do it, but now they will have a go at it (Jade – Interview 2).*

*Even when I had three groups going, they mostly are pretty good at monitoring themselves 'cos they were busy and just keen. I think they like it when they are ability grouped and they don't feel that pressure to ... you know, to ... they're not worried that they're going to let the team down or the side down, so they'll give it a go more ... more keen to participate. Mostly there is better participation with the ability grouping. They have participated more, when they were in their own level (Marg – Interview 2).*

It appeared that teachers found these changes in students' attitude and engagement affirmed the use of ability groups in PE. However, teachers also experienced some difficulties with the use of ability groups. These are detailed below.

### **How do we Group Students?**

Grouping of students in PE lessons was recognised by teachers as a way of catering for the varying needs of individual students. Only three teachers talked about taking charge of who worked with whom. Each

took a different approach. After observing her students' engagement in activities, Jess would "withdraw kids on their own ability and ... take the group that probably isn't as strong so that the other ones can be doing independent stuff" (Interview 2). Bernice indicated that she "just tried to group them. I never used to. I used to think they had to be mixed, so now the elite can go with the elite and be really competitive, and the ones that aren't can go with the ones that aren't, and they can change the rules to adapt them" (Interview 2). Linda, who was a self-reported 'expert' at sport and PE, detailed her experience of grouping the students, and the positive outcomes of this approach.

*Now I set up three groups. The higher group - the children that are confident with kicking the ball and trapping the ball, and then I have an average group and I have a below group ... the group that don't feel confident. And if they were mixed in with the confident group then they'd be like a fish in a sharks' pond.*

*So I've had a mind shift and my mind's changed from whole class to ability groups to small groups of children of their same competency. It was much better. I could see with the bottom group. I knew ... like for example, when [the adviser] came I worked with them and I just sent them off in groups of mixed ability groups, and then I could see children with higher skills, advanced skills, get frustrated at the children who couldn't throw it as hard as them or catch the ball, and it was just thrown to them ... just a normal catch but the children who were clumsy or the children who had below motor skills couldn't catch it.*

*So then when I implemented that, the children who were in the below group ... I don't like to call them 'below group', but you know, 'less advanced' group ... they were throwing at the same pace and they were working at the same pace. Whereas the high advanced children ... the advanced children, the fluidity of their game was quicker. They were kicking the ball ... and actually we played cone tag, and they were throwing the ball and they were catching it and they were setting up ... and they were doing ... they were setting up rules for themselves. Whereas the low ability group ... I had to set up the rules and then gradually give them independence, whereas this group did my rules and were hungry to incorporate their own rules too. The average group, they were a bit of both. They could be independent but they also needed that structure too (Interview 2).*

Of the other teachers interviewed, ten told of how they opted to let students self select their ability groups. These teachers appeared to be following the model that their advisers had used when grouping teachers during activities in staff meetings and in model lessons with a class of students. As Ruby indicated, "the adviser, she actually gave the children the opportunity to put themselves in ability groups ... you know, usually

as a teacher, we put them into groups as opposed to the children picking their own, and I thought, 'Wow!' ... but it's actually turned out to be really successful because, as you see, I found that the less capable children actually do better than the competitive ones" (Interview 2). Teachers felt that allowing students to self identify their grouping was "empowering for the students" (Patricia – Interview 2) and gave them more "ownership of their learning" (Hamish – Interview 2). For some teachers, such as Marg and Mere, it also appeared to alleviate some of the pressure of differentiating between students' abilities, given their own sense of having a limited understanding of physical activities.

### ***Issues with use of Ability Groups***

Some complications arose for teachers as they endeavoured to use ability grouping as a pedagogical strategy in PE lessons. An initial issue for some teachers (six of the 25) was how to "watch over" more than one group of students at a time, especially when they were spread all over the hall or field during an activity. This struggle was captured clearly by Ruby and Marg.

*It was daunting at first. I thought, 'Three! Watching three games!' but I guess with practice and having [the adviser] come in it's actually easier than I thought it would be (Ruby – Interview 2).*

*Sometimes it's a little difficult like when you're doing athletics. Because if you've got two groups running and they get a bit silly ... it's hard watching them all. You do see increased participation, so that's good. Although I mean, yeah, you're still having other groups running and practising while you're working with one group, but ... behaviour problems ... can be a bit of a problem there trying to watch all the different groups. It makes life more difficult for the teacher in a way. ... 'What are you doing?' and ... rather than just having one little group filing past you, but they don't get as many turns ... yeah ... more management required (Marg – Interview 2).*

Five other teachers also reported having difficulty using the ability grouping approach across all topics in the PE programme. Mere suggested that "it's just fitting it [ability grouping] into what we're actually ... our PE scheme which is sort of ... I suppose it ... like with athletics ... I don't feel as though it's sort of fitted in all that well there" (Interview 2). This was at times put down to having limited access to equipment. However, it would also appear that teachers struggled to conceptualise how to breakdown games and activities. This difficulty was

highlighted by all five of these teachers, and described by Marg when she suggested

*I mean sometimes you've still got to go out and just play a game. I suppose you could have two games going. Yeah, as I said, it's just getting the gear and it's just extra gear and extra ... it depends what the game is ... it's obviously ... I mean if you're playing cricket or you're playing softball it's ... you know it's hard ... I supposed you could have two games going (Interview 2)*

It appeared that these five teachers struggled with ways to conceive and modify sports in ways that would allow them to have multiple small games of cricket, softball, touch etc all going at once. So while they valued ability grouping or having students work in smaller groups, their understanding of the sports and activities and ability to modify them appeared to limit the applicability of the approach.

### **Ability Grouping does not Solve all Participation Problems**

While 24 teachers suggested that the use of ability grouping had helped address many issues to do with student motivation and participation, Rowland, an 'elite' performer himself, still perceived issues with non-participants even after he adopted ability groups. His point, outlined below, indicates that ability grouping alone does not create 'interested' PE students, and other factors, both pedagogical and content, need to be considered.

*I still see the issues, the problems that existed right along ... the non-participants ... they still exist and if they don't want to become involved they don't. And it is hard ... although they would be part of a smaller 'team', so to speak, so if it's three on three and there's someone who doesn't want to be there, they'll effectively muck up the situation by hanging back and not involving themselves fully, so ... that's an issue. And even talking with [the adviser], she said the same thing ... it's really hard to get ... you know it's like the inquiry process ... some kids just don't want to become involved in that and they won't. So that side of it hasn't altered for me (Interview 2).*

The findings highlight that as a result of the PD these twenty-five teachers have explored and, with one exception experienced positive student outcomes from the use of ability grouping. In conjunction with the adoption of questioning and learning intentions, the use of ability groups appears to have transformed teachers' pedagogical approaches to PE.

## **CHANGES TO PHYSICAL EDUCATION PEDAGOGICAL APPROACHES**

In addition to shifts in the use of general pedagogical strategies in PE lessons, the twenty-five teachers also all appeared to value the opportunity to explore curriculum approaches specific to PE. The exploration and trialling of TGfU, and to a lesser extent ABL, in the PD, challenged teachers' understanding of the traditional pedagogical approach to teaching PE.

Teachers recognised that the use of alternative PE curriculum models (ABL and TGfU) in conjunction with the transference of previously classroom based general pedagogical skills, created more space for teachers to adopt and deliver student-centred PE lessons. Reflective of comments made by the other twenty-two teachers, Bernice and Jade highlighted the shift to a more student-centred approach.

*It has made it less ... teacher-directed. Sometimes when you go out and teach children and it falls apart or they fight, you go back in and you don't bother with it again. You think, 'No, that didn't work. I'm not gonna try that'. But this [the games approach] puts the ownership back onto the children. Why didn't it work? What can we do? ... giving them one rule at a time in a game for instance, and then building on that, and then establishing their own set of rules. It's really putting it back onto the children and they are really responding well to that (Bernice – Interview 2).*

*Before it would have been a teacher with a whistle, do this do that, line up here... now they have a lot more ownership of what they are doing. It would be different for parents to see WAL [we are learning] about such and such and what have you learnt. More focused on children actually verbalising what they actually have learnt and are supposed to be learning and what they still have to be working on hopefully - the next step... before and for most of our parents when they were at school it was go out and play a game... One of the things it's made me realise is how important it is to put it back to them [the students], so the solutions are coming from them, Realise that they don't take in a lot of what is said to them - so you really have to get it to come from them (Jade – Interview 2).*

Teachers (15 of the 25) who suggested that they were used to using more teacher directed approaches in their PE lessons reported that the shift to increased student-centred pedagogical approaches had required them to change in particular ways. Leigh and Fiona clearly describe this change.

*I used to be pretty autocratic with my PE ... partly I think because of a lack of confidence, and I would come out with a*

*lesson, set ... and 'We're going to do this' and then they'd turn around and say, 'Oh we could do this' ... but I would say 'These are the rules. This is what we do' ... and I did used to be like that because I used, I was set to a plan and I wanted to follow my plan, ... I don't know whether they will say this, but I think that possibly they feel they have a bit more ownership over their PE now ... I feel that I'm giving my kids a lot more ownership of what they do, and I feel I'm listening to them a lot more (Leigh – Interview 2).*

*I think it's been quite a change in thinking for me because it was always very teacher directed, and now it's very much getting them back, 'What worked? What didn't work? What were your strategies?' (Fiona – Interview 2).*

While teachers had been exploring TGfU throughout the PD, exposure to pedagogical approaches associated with ABL occurred only at the end of the PD programme. Therefore, ABL still appeared to be very new and untried by teachers. Four teachers recognised that exposure to ABL gave them some good ideas for activities, and reinforced ideas of adopting student-centred approaches. However, while these teachers had identified changes they could make to lessons they had not trialled it with their class. Therefore, the impact of ABL on teacher pedagogical approach was less evident in the second phase of the data collection, and is consequently not addressed in specific detail in this section of the findings. In contrast, a change to teachers' practice as a result of engagement with TGfU was a dominant feature during the analysis of findings.

### ***Shifts towards Teaching Games for Understanding***

The adoption of TGfU (also referred to as a games approach in some schools) was evident in the changes teachers made to their practices as a result of participating in the PD. It is evident from the interviews that teachers had all engaged with the concept of teaching PE using games, and for some this meant using TGfU. All teachers reported that the games approach had allowed a wider range of students' opportunities to experience success, pleasure, or enhanced participation in PE lessons. For example, Leigh had seen her 'intellectual' student more engaged, as he had been able to contribute ideas to make games better, while Jade and Patricia had seen the use of games have a positive effect on the interpersonal relationships between students.

All teachers had experimented with TGfU. However, there appeared to be variation in their knowledge of the purpose and place of the approach in

the PE programmes; ability to move the approach beyond the models provided by advisers; and willingness to absolve responsibility as the teacher. These are each reported in more detail below.

**a) Understanding of the Purpose (Why TGfU might be Used)**

There was evidence of divergence in teachers' understanding of the intent and purpose of the TGfU approach. For teachers, such as Katie and Culhane, the use of games was not linked to the development of games sense or tactical understanding, but was simply about having new games that could be played with their class to help them develop movement skills. It was evident that for these teachers (eight of the 25), student learning was focused on the playing of the games, but not on the development of strategy thinking or teamwork, learning outcomes one might expect from the use of the TGfU approach. Confused understandings about the purpose of using games are highlighted by the three varied descriptions Fiona, Bronwyn and Rachel provided about how they were using the games approach in their lessons.

*Probably the key thing would have been the way in which they ... she [the adviser] showed us or they showed us to teach fundamental skills by using, whenever possible, in games. So she showed us lots and lots of different sorts of games that taught a skill, so that ... yeah you might be doing a whole lot of different things, but you're working on a particular skill (Rachel – Interview 2).*

*The whole emphasis of the PD was teaching skills, then relating it to games. I've sort of tended to perhaps do them separately. Whereas now I sort of try and perhaps ... teach a skill and then find a game that's sort of practising those skills (Bronwyn – Interview 2).*

*We come back and we talk about 'Okay what ... we need to be able to catch the ball' and talk about what you need to do to be able to catch a ball. But no, I wouldn't be doing rows and rows of kids catching the ball and that sort of thing. Could do some games to start off with. My emphasis would have been more on that, and less on the having fun. But now it's more on the having fun, and everybody being out there having fun (Fiona – Interview 2).*

The modelling of a games approach assisted these teachers to modify their pedagogical practices in PE. However, it would appear that teachers' limited knowledge of the tactics and strategies of game play reduces teachers' ability to create and recreate games to support students to develop this tactical game understanding. Instead, games become a

vehicle through which they develop students' fundamental movement skills.

For other teachers (17 out of 25) it would appear that the use of the TGfU approach, supported by a range of example units and resources provided by advisers, allowed teachers to identify other learning focuses in PE in addition to movement skills. This has transformed the focus of most teachers' lessons, from movement skill teaching to the development of cooperation, problem-solving and strategic thinking, all in game settings. Changes to understandings were evident across all 17 teachers' interviews, with the three quotes below echoing other teachers' views.

*We have been using a games approach in term four... so we are like starting with a game, stopping, thinking strategies, and then they're doing all of the work.. they really own it, and like Jake said to me "I really regret making that rule if you catch on the full you are out" their rules so can't get frustrated with it... students can play together without them getting upset. They are all now participating... I was not doing anything like this at the start of the year... its not just about skills, its about strategy, its about thinking about how to include people, it's a whole lot of things not just that one focus - basically B strand (Patricia – Interview 2).*

*They didn't get how you could improve your movement skills with balloons and all that and teamwork and tactics and anticipation and movement and all that, they just didn't realise it. And they had a hell of a lot of fun doing it (Hamish – Interview 2).*

*I mean, chuck the chicken was a nightmare when we started because it was quite a complicated game, but a simple game when you think about it and if you haven't got any skills it was a hopeless game you know. And it wasn't skills about physical it was skills about cooperating and working in a group and taking turns and all those things that five year olds are not good at. But it was amazing, at the end of Term 2, I went back to Jenny at the course and said, 'Hey, we can play chuck the chicken and it works'. Whereas at the beginning of the year it was a bloody nightmare. I mean, another teacher took photos of her kids playing it and it was like a ruck. They just all dived on this chicken and it was hopeless. But now it works, so it's pretty cool (Sally – Interview 2).*

While strategic thinking was being incorporated into lessons, it appeared to be limited to student development of tactics. None of the teachers interviewed discussed or demonstrated knowledge or understanding of the language associated with tactical games play, such as space, width, depth. While Sally outlined the social benefits of using the TGfU approach, the continuation of this interview confirms that Sally's class

had been playing this one game, chuck the chicken, for an entire term (ten weeks).

***b) Moving Beyond the Model***

The use of the models provided by advisers appeared to provide teachers with the confidence to try something new in their PE lessons. However, with the exception of one teacher, Patricia, all teachers relied heavily on the games demonstrated by advisers and participated by teachers (playing the role of the student-aged learner) in staff meeting and cluster workshops. Teachers described the “game sense cards” that covered everything they needed to know and do. They had not yet developed their own games/activities to use with their classes.

In addition, teachers relied on the lesson/unit plans for invasion and tag games to direct their practice. Teachers across all year levels used the example tag or invasion games units with their students. Some teachers had made minor modifications, with guidance from the advisers to shift the focus. For example:

- Sally used the tag games unit to form the basis of a unit focused on picking partners with her New entrant/Year One students;
- Kim used tag games to explore strategy and keeping each other safe with her Year one/two class; and
- Bernice used invasion games to help her Year six students understand using space and being cooperative when playing sports such as netball and rugby.

In comparison, and as mentioned in the questioning section above, teachers appeared to struggle to develop questions and questioning sequences beyond those that were modelled or provided by the advisers. With the exception of Patricia, teachers did not move beyond the example resources and plans, to planning of their own units using the games approach, or their own questioning sequences associated with strategic game play.

The exception to the pattern of reliance demonstrated by other teachers was Patricia. She had accessed a website dedicated to TGfU. This website ([www.playsport.net](http://www.playsport.net)) supplemented the resources provided by the adviser, and had provided her and her colleagues with an extensive array of games, ideas for questioning, and variations on known activities that

assisted her in developing alternative activity to meet the desired learning intentions.

In contrast to the sense of confidence created for most teachers by having access to models for practice, Leigh's confidence and sense of her own professional capabilities appears to have been eroded by aspects of the PD experience. Only due to the failure to enhance her Year seven/eight students' learning and engagement through the use of an adviser based game (outlined in below), had Leigh come to realise that what worked in the model provided during a PD session, was not so easily adopted straight into her own lessons.

*The adviser said "Do me a favour use this game Fivesies that we got taught at our course, use that" and ... well Fivesies is the most boring game in the world, and it seems to be quite pointless and we [she and her class] struggled with it for two weeks and it's only just testament to their [students] tolerance that we stuck with it. Because they wouldn't do it properly because it was stupid ... and I could see that. And ... we only did it properly at the course because we're teachers and we're good. It's where five people ... you get a piece of equipment and you think of an action to do with it. And you stand and you all do the five actions. It might be okay if you're six, but not for these guys. And they persevered ... and right at the end and we had a whip round after the last one ... they all said, 'Oh, yeah it's okay, it's okay', then Tama said, 'It's boring' and I said, 'Yeah, 'tis boring 'cos we've done it lots of times'. Then I went back and thought ... 'No, I've got to acknowledge what he said' and so I said the next day, 'I acknowledge what you said Tama, it is a boring game. I agree. You're right. And big ups to you for having the courage to say it was a boring game' (Leigh – Interview 2).*

This experience had reminded Leigh to trust her own knowledge of her students, and highlighted that the 'expert adviser' did not always know best.

### **c) Absolving Teaching Responsibility**

While the use of games for understanding approach appears to have shifted the focus from teacher directed to student-centred approaches, the evidence indicates that this also allowed some teachers (11 of the 25) to absolve some of their responsibility as 'the teacher'. The use of a games approach seems to have reinforced a belief that if students are playing the game, are busy, happy and good, they are learning in PE. The bank of games allowed teachers to set the game up and then leave students with the responsibility to make modifications to the game in order to make it successful. While teachers as 'facilitators' is not unusual

or an issue, in a TGfU approach the teacher needs to take action to ensure that students engage in the strategic thinking process, and develop interpersonal skills, as opposed to just making the game more fun. This abrogation of responsibility was indicated by comments such as

*PE used to be, 'Do this, that and the other' ... really, that was how I came into the PD... and what I've seen so far, now it's sort of giving them ownership, so I really don't have much to do other than some set rules, and boundaries ... which we do it together anyway, and then I just let them take over and sort the problems out and organise their own games, set their own rules (Louise – Interview 2).*

The use of a TGfU, and to a lesser extent ABL, in the PD appears to have allowed all teachers to explore at least one alternative approach to delivering PE curriculum. This approach, supported by resource materials and models provided by advisers, appears to have assisted teachers to move beyond teacher directed approaches to PE.

## **CHAPTER SUMMARY**

This chapter has outlined the findings from data collected about the impacts Model 2 of the *Physical Activity Initiative* PD programme had on a sample of primary teachers' knowledges for teaching PE. These findings highlight teachers' pre-PD knowledges of and practices in PE before outlining teachers' experiences of the design and delivery of the PD programme they were involved in. Finally, this chapter details the shifts in teachers' knowledge of the nature, purpose, and curriculum of PE, and the impacts of the PD on teachers' pedagogical approaches.

## **CHAPTER FIVE – DISCUSSION**

This chapter is a discussion of the findings about how Model 2 of the *Physical Activity Initiative* PD programme impacted on a sample of teachers' knowledges for teaching physical education (PE). This discussion is centred on the complexity and the impacts of interactions between (and on) the parts of the PD system (Borko, 2004), the people, ideas, tools and the settings (Wertsch, 1991). The interactions among advisers, teachers, students, and the PD programme, in the broader social context are examined in this discussion. The theoretical 'stance' for the discussion is the factors identified in the literature review that related to PD effectiveness and domains of teacher knowledge.

The discussion starts with an overview of the systemic issues that appeared to impact on outcomes of the PD programme, followed by an examination of how the needs of teachers as learners are addressed, or not, by the design and delivery of the PD. Finally the discussion explores teacher knowledge development.

### **THE PROFESSIONAL DEVELOPMENT PROGRAMME**

While the influence of context will be highlighted throughout the discussion, it is important to note how a range of systemic issues in the broader context of the PD programme (Petrie, Jones, & McKim, 2007) appeared to influence the outcomes for the teachers. Government initiatives, such as the *Physical Activity Initiative (PAI)* PD model under investigation, are not self-sufficient entities. PD providers, schools and teachers' responses to a particular initiative are in part shaped by antecedent policies and practices, and the way these are played out in the local context. Policy, drafted on a national scale, such as the *PAI* from which stemmed the PD, is variously interpreted and distributed, both at regional level (advisory services) and in each local context (schools) before it impacts on individual teachers and their students. Both advisers and teachers make sense of policy "in ways that are shaped and framed by their own knowledge, skills and interests and the context in which they find themselves" (Cowie, Jones, & Harlow, 2005, p.117). The following section briefly discusses systemic and contextual issues that appeared to contribute to the way the teachers received the PD and therefore the impacts on their learning.

## **PROFESSIONAL DEVELOPMENT PROVISION**

Evidence from the case studies illustrated that there were operational factors at the PD provider level that had implications for the delivery of the PD. In particular, the way the PD provider organisations operated, their contractual obligations and the knowledge and experiences of the advisers, appeared to have implications for the delivery, content development and selection of facilitation models that advisers used. These are each discussed in more detail below.

### ***Contractual Obligations***

*The model is for professional development based on the unique needs of the school ... The adviser will help the school to examine their existing Health and Physical Education programme/s in light of the current new Physical Activity Initiative, using a whole school approach. A focus on teaching and learning in physical education will be paramount (Ministry of Education, 2005b).*

The detail above, provided to advisers, indicates that the PD would focus on the unique needs of each school, with a particular focus on health and physical education (HPE) programmes, and teaching/learning in PE. The Ministry of Education proposal for the PD was aligned with the literature on effective PD, which suggests that teacher learning is enhanced when PD is located in the school context and not abstracted from the realities of teachers' classrooms (Armour & Duncombe, 2004; Armour & Yelling, 2004; Guskey, 2003; Pope & O'Sullivan, 1998; Putnam & Borko, 2000; Richardson, 2003). In addition, and in contrast to the short-term, one off workshops common to PE-PD (Armour & Yelling, 2004; Ball & Cohen, 1996), the proposed PD programme offered teachers and schools the opportunity to access support from advisers for up to eight days across the school year.

The findings indicated that there was disconnection between the rhetoric of the proposed school-wide, context specific, on-going PD programme and the realities of implementing such a programming on a nationwide scale. The broader contextual issues are discussed below, and further issues are explored in the section titled *Teachers as Learners*.

The findings chapter noted that the PD programme was based on a lead teacher, one-off cluster meeting approach, where one teacher from each school (with the exception of two schools who sent two teachers) attended a series of up to five one-day workshops throughout the year. This

involved ten of the 25 teachers involved in this study. The lead teachers and remaining 15 teachers also had access to school-based professional learning through: staff meetings, the modelling of lessons/activities, the distribution of lesson/unit plans, and most teachers (22) taught a lesson that the adviser observed, and provided feedback on. Of the twenty-five teachers interviewed, fewer than half (ten of the 25 teachers) reported that they received the full eight days of PD. The findings highlight that in contrast to the proposed eight full days of ongoing PD, teachers who were not lead teachers, received fewer than three days PD across the year, and that the predominant model for receiving the PD was through after school staff meetings held once a term.

Although 15 teachers had less than eight full days PD across the year, findings indicated that this appeared to make little difference to the learning outcomes for the teachers. There were only two noticeable differences between outcomes for lead teachers and those for the remaining 15. First, four of the lead teachers were able to articulate more clearly the differences between physical activity and PE, as they had been to additional meetings where this had been discussed. Second, lead teachers from three schools had opportunities to explore long term planning, and consider what form the school PE programme would take. Thirdly, the additional time spent by the lead teachers at cluster meetings seemed to simply equate to more opportunities to participate in games and activities. In addition, it appeared that cluster meetings were used to up-skill the lead teachers so that they were able to support the adviser when they ran staff meetings. Prior experiences, knowledge, practices, attitudes and confidence to teach PE, appeared to have a greater impact on the teacher learning than the amount of time spent engaged in the PD.

Due to this limited contact it appeared that advisers were forced to be highly selective about what content was realistic to address in the one-year time frame. The result of these decisions was a prescribed PD programme, which will be outlined in more detail later in the discussion. This contrasts with the Ministry of Education vision for a PD programme designed to meet individual school needs, and that accounted for local variation (the impacts of this decision are discussed in more detail later in the discussion). Advisers commented that they did the best they could in the time frame and context of a one-year model, yet admitted to feeling

they were withdrawing support from schools before schools had made enough progress to sustain the changes without further external guidance and support.

### ***Differing Adviser Knowledge Base, Experience and Training***

As the 'perceived experts' working with teachers in schools, the advisers were pivotal to the success of the PD, a finding consistent with international research on school PD. However, it appeared that, with the exception of regional co-ordinators, most advisers working in this PE-PD programme were appointed from positions as generalist teachers in local primary schools. According to comments made by advisers during focus group interviews, there had been little time between their appointment to the position of adviser and them beginning work in schools. The transition from roles as generalist teachers to advisers in the HPE curriculum area appeared to create particular challenges and tensions for new advisers, including having limited opportunities to develop their own subject matter knowledge for PE, or an understanding of PD models, practices and theories. New advisers made comments during interviews which indicated that they had had limited opportunities for professional learning themselves, and had relied on the knowledge learnt from their own PD experiences as teachers in schools, and the expertise of their regional coordinators. This appeared to limit the potential for advisers to deliver flexible PD to the teachers involved in the programme.

## **SCHOOLS**

Across the ten schools, there were processes that supported and others that constrained the opportunities for teacher learning. Each local context had its own range of factors that enabled and constrained the development of teachers' understanding and practices in PE. However, issues with over commitment and school processes and leadership appear to have had the most influence on the level of impact of the PD. Each of these areas is explained in the sections below.

### ***Over Commitment***

The findings of this study reinforce the work of Timperley, Wilson, Barrar, & Fung (2007) and Wylie (2007) by highlighting the challenges for primary schools and teachers when dealing with multiple PD programmes simultaneously. The findings suggest that an important influence on teachers' engagement in the PD was the school's

commitment to other initiatives, both/either internal or external. Eight of the ten schools (20 of the 25 teachers) had other commitments, which placed constraints on teachers' time and motivation. External initiatives were demanding of teacher time and focus. Other schools had internal pressures, and/or competing agendas that appear to have created tensions for staff. For example, one school had a new Principal who was trying to embed an inquiry learning approach into classroom practices while also changing school policy. At another school the Principal was promoting fitness, which appeared to have become a dominant focus for many teachers. Interviews with Principals highlighted their concerns with the ongoing expectation that schools should be involved in external PD. Some principals thought that pressures, placed on them by the Ministry of Education, did not allow teachers time to develop an understanding and confidence from the PD they undertook (such as PE), as the next year they moved on to a new focus (for example, numeracy), and the learning from the previous year was pushed to the side.

### ***Processes and Leadership***

In line with previous research in PE-PD (Bechtel & O'Sullivan, 2007; Faucette, 1987), this study highlights the importance of Principal support and a school culture that encourages teacher change. School wide processes and leadership structures appeared to impact on the PD process and teachers' learning. The findings highlighted that:

- Where principals were themselves engaged in the PD, they are better placed to support teachers;
- When PE was given status by the Principal, teachers appeared more willing to engage in the PD, and less inclined to allow other curriculum areas or priorities to take precedence over time allocated for PE; and
- Organisational systems that allowed teachers time to process and trial new approaches, and provide PD support for other teachers, appeared to be more effective.

## **TEACHERS AS LEARNERS**

This section explores the complexity of attempting to understand these classroom teachers as generalists responsible for teaching PE, and the way they were positioned regarding the design and delivery of the PD. It

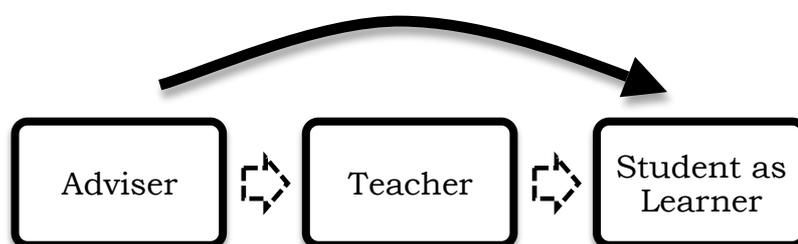
was found that the teachers in this study, like the students they taught, benefited from learning processes that allowed them to consolidate and examine their prior knowledge and practices, adopt or adapt new knowledge and practices, apply prior knowledge/practices in new situations, and therefore reposition and reconstruct previous beliefs. The latter included their beliefs about themselves as teachers of PE.

The study has highlighted a finding that this PD did not always reflect teachers' needs as learners. In relation to this, four areas stood out and will be discussed: (i) the conflict between the PD focus on student learning and learning outcomes for teachers; (ii) the teachers learned to teach PE when they role-played being their students; (iii) the standardised nature of nationally delivered PE-PD programmes; (iv) the effects of the resources used in the PD. These are discussed in more detail below.

### **IDENTIFYING THE LEARNER**

The focus of this PD programme centred on enhancing teacher practice in order to improve learning outcomes for students. The findings (and aims of the PD model) highlight how the intended outcomes of the PD, and the design of resources used, centred on students as the learners (represented by the solid arrow in Figure 9) and the teachers as a conduit for change (represented by the dashed arrows in Figure 9). For example, unit/lesson plans assisted teachers to trial new pedagogical approaches and content to enhance the PE learning outcomes with their classes.

Figure 9: The positioning of the teacher in the PD



Curriculum theorists have argued the centrality of teachers as learners in PD, in addition to the teacher role. For example, Darling-Hammond & McLaughlin (1995) and Borko (2004) suggested that in PD the teacher is both the learner and the teacher, and the adviser is there as a guide to the teachers as they construct and trial new knowledge and practices.

However, the findings suggest that in this PD the student was positioned and talked about as the learner and the teachers were, in effect, in a neutral position as intermediaries through which enhancements to student learning outcomes could be achieved. It is certainly essential to recognise the importance of enhancing the learning experience and outcomes for students. In order to do this, however, it is imperative that the learning outcomes for the teacher are also a central focus of PD, since students will not change unless the teacher does.

### **LEARNING TO TEACH FROM THE POSITION OF LEARNER**

The findings showed that teachers frequently played the role of their students during learning activities in staff meetings in the course of the PD. For example, when advisers demonstrated model lessons, games and learning activities for the teachers to use in the classroom, the adviser assumed the role of the teacher, and the teacher played the student. The study found that this experience provided the teachers with the opportunity to play the games, do the learning activity (as a learner), and then take the activity to their own class to replicate it with their students. This was evident as teachers, such as Culhane, talked about their experiences of the PD. She commented

*She [the adviser] does PD for the whole staff, we play games and things that we can take straight into the classroom. You know it's not ... sometimes you go for PD and it's all theory and you go back and think, 'Well what was that all about?' but with her she shows us and we play the games and we do it. And we have a lot of fun. And so we just take it straight back into the classroom (Interview 2).*

Teachers were excited about the novel activities, which were introduced to teachers in the PD. While engaging in the learning activity (game), in the role of the student, teachers were required to learn the skills, rules and strategies associated with the activity. The teachers learnt the sequence of the activities and the rules for the games and so on, from the perspective of the student. There appeared to be an expectation that, through actually doing of the activity, teachers would understand the pedagogical decision-making processes that the adviser, as teacher, was making to ensure the activity ran as intended and met the needs of the learners.

In processes that supported the teachers to view lessons and activities from the perspective of the student, most teachers (15 of the 25)

appeared to have few opportunities to discuss and reflect on the decisions and improvisations the teacher (adviser) made as they delivered the lesson, in relation to sequencing, questioning, and feedback processes. In contrast, teachers reported feeling excited because they could go back to their class and run the activity effectively because they knew how to do it. Other opportunities were provided for some teachers (lead teachers who account for ten of the 25) to discuss and reflect on the role of the teacher, but this was limited by time and adviser availability and experience.

The literature suggests that teachers require time and opportunities to have in-depth discussion about content, student conceptions and misconceptions, and pedagogical strategies (O'Sullivan & Deglau, 2006). In contrast, this PD appeared to simply provide teachers with another 'apprenticeship of observation' experience (Stuart & Thurlow, 2000, p. 114). As participant-observers the teachers had opportunities to become expert participants in the games and learning activities (building a bank of content ideas) while their opportunities to develop as teachers of the activity were limited.

Teachers role-playing being students appears to be a recommended teaching model in both pre and in-service PD (Ward, 2009). However, it raises the question of how teachers, when they are playing the role of the learner, learn to be the teacher. This question was not addressed in this study, and does not appear to have been discussed in the literature. However, it raises the issue of how pedagogical content knowledge (PCK) is developed, which will be discussed below.

## **STANDARDISED PROFESSIONAL DEVELOPMENT AND THE DIVERSITY OF TEACHER-LEARNERS**

Across New Zealand teachers were exposed to a standardised PD programme, regardless of variations such as school size, socio-economic status, ethnic makeup, or prior experiences of the teacher. All teachers explored quality teaching, *Teaching Games for Understanding* (TGfU), the Movement in Education approach to motor skill learning and, to a lesser extent, long-term planning. What demonstrates this standardisation best was that the same small games, learning activities, and model lesson/unit plans were used throughout the country.

There was some variation in the number of opportunities teachers had but the findings suggest that there was little difference in relation to the content or the delivery of the PD programme in regard to school size or context. For example, in a rural school of only two classroom teachers and 19 students, teachers were presented with the same PD programme as their counterparts in an urban school of 25 classrooms. Patricia, a teacher in a small school, commented that “lots of the PD focused on stuff that was relevant for those in large schools but not in a two teacher school like ours” (Interview 2). A focus in the PD on planning for individual year levels, was less relevant to Patricia who was responsible for teaching in a multi-level classroom. However, Patricia had worked around this during cluster meetings by ensuring that she got into groups with teachers from other small rural schools, so they could focus on multi-level planning. The findings suggest that providers and designers of PD programmes, based outside the individual school context, need to consider how the location and size of a school may impact on the design and delivery of the PD programme.

The findings highlight contradictions inherent in the delivery of the PD. Teachers were encouraged to use student-centred approaches and plan in ways that met the diverse learning needs of their students (Alton-Lee, 2003), but as learners they were not always exposed to these same pedagogical understandings or approaches (Lanier & Little, 1986). Instead they were treated homogeneously. There appeared to be little recognition of the diverse learning needs of these teachers, who had different past experiences both in physical activity and as teachers, and working in a diverse range of school contexts and communities.

My own experiences of trying to understand and recognise the diversity among the twenty-five teachers underlines the dilemmas that deliverers of the PD programme would have faced in designing a programme and resources to support the varied learning needs of primary teachers involved in the PD. My own attempts to categorise the teachers in early phases of the analysis process highlighted the difficulty in recognising individual teachers. Initially there appeared to be three groupings, e.g. those lacking confidence to teach PE, those who felt adequately prepared to do the basics of teaching PE well, and those who perceived themselves as experts who moved well. As the analysis progressed it became evident that these teachers were probably like any group of learners in that

outcomes varied across the whole group and there was no fixed or linear pattern of learning, regardless of similarities in the starting points. For example:

- The competent movers, 'expert' teachers struggled in different ways with different aspects of the PD as they tried to adopt new ideas. Rowland struggled with relinquishing the direct instruction approach in favour of more student-centred options, while Tina could not develop appropriate learning intentions for her class, even when she had a good knowledge of activity content.
- In contrast Jess and Mere, who initially lacked confidence in their ability to teach PE really embraced the shift to more student-centred and a less competitive focus in PE, as they felt it made for a more collaborative and positive learning environment for students to experience.

Like the students they taught, these teachers as learners required PD that was closely linked to the individual teachers' knowledge, classroom practice, and school context (Armour & Duncombe, 2004). However, as Guskey (2003), indicates moving beyond a standardised programme requires PD providers to understand the complexities of the varied contexts and individual teachers' knowledges and practices, and then attempt to account for these in the one overarching PD initiative. This is even more challenging when advisers are working under contractual requirements from the Ministry of Education. With each adviser working across approximately ten schools and only having eight days to work in each, the prospect of recognising teacher/school needs and designing individualised or even school specific PD programmes in this time frame would have been daunting.

### **USING RESOURCES TO ENHANCE TEACHER LEARNING**

The introduction and use of resources such as example lessons and units appeared to have assisted the twenty-five teachers involved in the PD to employ a wider range of pedagogical strategies and activity ideas in their PE lessons. It would appear from the findings that the twenty-five teachers used resources provided as part of the PD to supplement their current practices and programmes. For all teachers the long-term plans, model lessons and units associated with *Adventure Based Learning*

(ABL), TGfU and the movement approach, games/activities, learning intentions and question sequences appeared to represent 'guides' for teaching PE, which could then be replicated in their own classrooms.

### ***Reskilling and Deskillling Teachers***

Pre-packaged resources, such as lesson/unit plans and books with game ideas, appeared to be valued by the teachers involved in this PD, "as a practical and sensible solution to the problem of curriculum time, resources, and 'skills'" (Apple & Jungerk, 1990). Teachers reported feeling more confident, motivated and competent teaching PE, and the resources provided played a key role. However, the findings indicate that the use of such materials, designed in ways to support the reskilling of these teachers, had an unintentional outcome. The reskilling process actually deskilled the teachers (Smyth, Dow, Hattam, Reid, & Shacklock, 2000).

Resources used in this PD were designed to improve student learning without accounting for what the resources meant for teacher learning. For example, the lesson plans on invasion games were designed to provide teachers with a sample plan for what teaching in PE might look like. However, there appears to be little evidence that demonstrates how the use of sample plans supported teachers to critically reflect on or challenge the content, or understand the process or thinking that underpinned the development of the resource (Cohen & Hill, 2001; Darling-Hammond & McLaughlin, 1995; Ball & Cohen, 1996). Apple (1982) argues that pre-packaged resources, such as lesson and unit plans both control and deskill teachers as they divorce the conceptualisation of the resource from the delivery or execution. In doing so the process appeared to contribute to a reduction in teachers' abilities to adapt resources to their local contexts and the needs of their learners.

The deskilling of teachers was apparent in the learning process. The resources used in the PD were designed and delivered in ways that "made the content and the delivery of PE lessons 'idiot proof'" (Sally, Interview 2). The lesson and unit plans were detailed in terms of the content and pedagogical approaches to be used. The 'right' way to deliver the lessons and activities was provided through the modelling of these by the advisers. Although the teachers were reskilled by being shown how to

do things the 'right' way they were also deskilled because they were not required to understand:

- content for student learning beyond the level prescribed in the plans;
  - the rationale behind the underlying pedagogical approaches;
  - the reasoning behind the sequence and flow of the lessons;
  - how to develop the content across time and the community, or year levels; and
  - how to improvise and use the resources more flexibly.
- (Ball & Cohen, 1996; Schneider & Krajcik, 2002).

This deskilling was evident in Leigh's tale of teaching fivesies (a game demonstrated by the adviser) to her class even though privately she thought it was a disaster. Leigh appeared to lose confidence in her own ability to make decisions about the content and activities most appropriate for her students. Leigh stuck to the game/lessons that the adviser had suggested would work best even though she knew it was not working. It appears that she lost confidence in her own ability to judge what worked for her students. It took a student to say the activity was 'dumb', before she was willing to trust her own instincts.

These twenty-five teachers appeared to seek and employ resources for their own pragmatic reasons, using them partly to solve problems associated with high workloads, expectations to teach across all curriculum areas, and in Leigh's case a lack of confidence in their own knowledge and ability to teach PE (Apple & Jungerk, 1990).

### ***Resources Defining Curriculum Knowledge***

In line with the work of Fullan and Hargreaves (1992), this study found that teachers valued opportunities to access externally generated resources, such as those provided by advisers, to support their teaching. However, it appears that some teachers became reliant on the externally generated resources, such as lessons, units and activities, provided by the advisers. The resource functioned to compensate for perceived limitations in relation to teachers' curriculum knowledge and PCK, and gave them starting points for change. This did not appear to alleviate the problems associated with limited teacher knowledges (Apple & Jungerk, 1990). The resources provided to teachers reflected only a sample of the content and pedagogical approaches that are relevant and applicable in

PE lessons, and therefore the teachers' PE curriculum knowledge was limited to a new but still narrow view of PE.

Instead of supporting teachers to develop the knowledge and skills to create learning opportunities to meet the needs of their students the findings suggest that a 'pre-packaged' school and classroom curriculum programme emerged as teachers experimented with the resources provided by the advisers. The use of resources as guides to teachers' practice appeared to generate a notion of what should constitute the PE curriculum in primary schools. This is evidenced in the way that:

- the model long-term plan was adopted by two schools without modification to reflect the different needs of their school community. One school was rural, decile 8, with five classes (roll approximately 100), while the other was urban, decile 5, with over 600 students, and 25 teachers;
- unit plans were adopted and delivered by teachers regardless of the mismatch between the year levels the unit was designed for and the year level they were teaching;
- lesson and unit plans were replicated by teachers, with little modification to meet the diverse needs of their students; and
- the same games and activities, such as dribblers and robbers, were replicated in schools throughout the country. The only clear exception to this was Patricia, who had sought out extra activities to supplement those provided by the adviser.

The findings indicate that teachers clung to the 'pre-packaged' resources (and ways of teaching/pedagogical approaches) they received during the PD, even when these materials were not designed to meet the specific needs of their students/school context. This study reinforces concerns of researchers in fields other than PE (Apple & Jungerk, 1990; Davis & Krajcik, 2005; Ball & Cohen, 1996). The study demonstrated how the content and pre-packaged resourcing can wrongly imply to schools and teachers that teaching curriculum PE can be done using a set formula, where the importance of context, the individual learning needs of teachers and student groups, are irrelevant. It appeared that the adoption of the resources provided in the PD resulted in someone outside the classroom, in this instance the advisor(s), making decisions about what teachers in the classrooms should be teaching and how they should teach it; and without recognition of the variation needed to reflect

difference in context, teachers, or students. However, by relinquishing the decision making process to external experts, these teachers also appear to have relinquished their autonomy in relation to curriculum decision-making. The findings support previous research (Ball & Cohen, 2008) and indicate that the materials provided as part of the *PAI* PD programme ‘de-skill’ the professional work of the twenty-five teachers and lessened individual and school autonomy over curriculum content and delivery of PE in their school context.

## **KNOWLEDGE DEVELOPMENT**

The findings provided evidence that teachers’ general pedagogical and PE subject matter knowledge developed as a result of the PD. However, the findings also highlighted that the PD provided little opportunity for teachers to develop the ability to “apply their integrated knowledge flexibly to make decisions in real time and in widely varying contexts” (Davis & Krajcik, 2005, p. 4), in order to create meaningful learning experiences for their students.

The findings and analysis, in line with key literature, reveal the complexity involved in understanding teacher knowledge and the fuzzy boundaries that exist between categories/domains of knowledge (Borko & Putman, 1996; McEwan & Bull, 1991). This section explores this complexity of teacher knowledge development in PD on teacher learning and highlights how disconnections in the process of knowledge development appeared to hamper teacher learning. In particular, this section focuses on: general pedagogical knowledge, PE subject matter knowledge, and the role and importance of subject specific pedagogical content knowledge for the primary school teacher.

### **GENERAL PEDAGOGICAL KNOWLEDGE**

This study found that teacher’ confidence and motivation to teach PE was enhanced by the PD package without making significant changes to their PE content knowledge. The PD, and particularly the use of resources in the form of lesson/unit plans (both modelled and written) allowed teachers to build on their repertoire of activities and ideas, and trial classroom-based strategies in the PE context. This learning appears to have supported teachers to feel more confident and comfortable as teachers of PE, and encouraged them to recognise PE as “the same as

reading or writing or anything else ... science, or anything else in teaching... A light comes on, yeah you can do the same as you do in any other subject” (Marg – Interview 2).

When teachers were encouraged and supported to use general pedagogical strategies typically reserved for the ‘classroom’ in PE lessons, these became a key influence in changing teaching practices, confidence and motivation to teach PE. Culhane’s comment, below, was indicative of teachers who had originally not been enthusiastic about teaching PE.

*I think my teaching in other curriculum areas has transferred to PE in a positive way because I’ve done that type of thing [referring to learning intentions and questioning] with other areas, but not with PE. I always thought that it didn’t have to be in PE. Yeah, so now the PE has come in with the others rather than the other way round... I think the more you do it, I mean your confidence grows. It’s like anything, the more you do it, the better you get and the more your confidence grows and it just gets better and better. So I’m finding from term to term my confidence is a lot better now and I don’t cringe you know when I think of PE and I actually look forward to it (Interview 2)*

These findings appear to challenge studies that have found that lack of PE content knowledge among primary school generalist teachers contributed to uncertainty about what they were doing and low levels of confidence and teacher motivation to teach PE (DeCorby, Halas, Dixon, Wintrup, & Janzen, 2005; Hart, 2005; Ball & McDiarmid, 1990; Morgan & Bourke, 2004).

The findings demonstrate, however, that the effectiveness of general pedagogical strategies is counteracted when teachers lack PE content knowledge and understandings of level specific PE content knowledge. Evidence from the findings associated with learning intentions, questioning and ability grouping, indicate that without adequate PE content knowledge teachers have difficulty constructing and adapting activities, developing explanations and questions. The findings are consistent with other research (Carlsen, 1991; Leinhardt & Smith, 1985; McDiarmid, 1989). For example: Tina and Jeanette both shared learning intentions with their classes that were, in terms of the PE content, either too advanced or not challenging enough for their students. The findings suggest that teachers struggled to plan effectively in ways that moved student learning forward (Romar, 1995; Werner & Rink, 1989).

While some teachers had begun to develop confidence with their questioning, others struggled to know “what questions were worth asking” (Black, Harrison, Lee, Marshall, & Wiliam, 2004, p. 12) and relied heavily on the example questions provided in the model lessons. The findings suggest that, when teachers lacked PE content knowledge, they were less likely to be able to respond flexibly or with confidence to unexpected responses or further questioning by students, a matter noted by Black and Wiliam (1998).

Teachers used a range of criteria for grouping students. However, all twenty-five teachers had realised that they could use ability grouping techniques, previously reserved for ‘classroom’ subjects, in their PE lessons. While all twenty-five teachers appeared to be able to identify students of different ability levels, many opted to allow students to self select the ability group they worked in. For some teachers the use of ability grouping assisted with classroom management, and was not used as a mechanism to assist the teacher in providing varied activities and progressions that catered for the differing needs of each group. The findings of this study reinforce the literature on ability grouping (Gage & Berliner, 1998; Slavin, 1987) by highlighting that the effectiveness of ability grouping for improving student learning is dependent on the knowledge and skills of the teacher to recognise ability difference between and within groups, as well as to design enriching programmes of learning that cater for these differences. The findings indicate that some teachers did not have the PE content knowledge to be able to assess their students’ abilities in PE, and therefore were less likely to be able to group them appropriately or design activities in flexible ways that met the varied needs of each learner, or grouping.

While the teachers in this study were able to work from the model lessons/units they were provided, observation of lessons taught and interviews with teachers illustrated how, regardless of perceived levels of expertise, all teachers struggled to fully utilise general pedagogical strategies when their PE content knowledge was limited. It has been found internationally that teachers with well-developed pedagogical skills can still experience difficulty in responding to student needs and ideas when they teach with limited content expertise (Gess-Newsome, 1999b). In this study, this lack of PE content knowledge appeared to limit teachers’ ability to provide experiences and activities that guided and

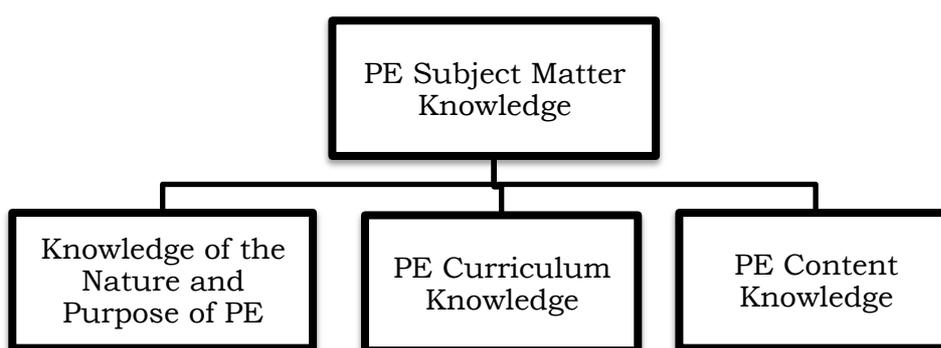
extended student progress. These results are consistent with the work of others (Ball & McDiarmid, 1990; McDiarmid, 1989; McNamara, 1991) and highlight that, although teachers were employing various strategies, they were used in ways that appeared to constrain student engagement, participation and progression.

## **SUBJECT MATTER KNOWLEDGE**

As Ward (2009) indicates, “teachers are rarely offered opportunities to learn more about PE subject matter” (p. 347). In contrast, the findings outline the extensive opportunities teachers in this study had to explore PE subject matter. However, the findings also highlight that developing PE subject matter knowledge for primary teachers is complex. Teachers need opportunities to develop understandings of the nature, purpose, curriculum, and content of PE (Borko & Putman, 1996; Cochran & Jones, 1998; Gess-Newsome & Lederman, 1999; Grossman, Wilson, & Shulman, 1989). This section explores the impacts of the PD on teachers’ subject matter knowledge, and raises the question about what PE subject matter knowledge needs to be developed to best serve the primary school teacher.

For the purposes of this discussion subject matter knowledge includes PE content knowledge, and knowledge of the nature, purpose, and knowledge of PE curriculum (see Figure 10).

Figure 10: Subject matter knowledge as defined in this study



### ***Knowledge of the Nature and Purpose***

The findings show that the PD provided teachers with the opportunity to explore alternative understandings about the nature and propose of PE. The PD appeared to support teachers to develop a richer and possibly more flexible knowledge of PE (Borko, 2004; Calderhead, 1996). What is PE? Asked this question before and after the PD, the findings highlighted

that some teachers had begun to reconceptualise the nature and purpose of PE. Even so, this takes time and confusions were still evident at the end of the PD.

The findings show that the PD had allowed the majority (15 of the 25) of the teachers to give more importance to PE in a class programme, because they had been alerted to a wider range of purposes than they had been able to identify prior to the PD. Teachers indicated that the PD had challenged them to consider other purposes for teaching PE to their students, beyond fitness, fun, and learning to play sports. The physical benefits of participation continued to be central to over half (14 out of 25) of the teachers' understandings of the purpose of PE. More teachers had also begun to recognise the important role PE could play in supporting the students' social development. Positive changes in the way students were interacting with peers in PE lessons, and changes in their attitude and engagement appeared to support teachers to see the value of using PE to achieve social outcomes. For some of these teachers the social (or what could be referred to as the instrumental or 2<sup>nd</sup> order PE objectives: Tinning, 2000) had become the major purpose of PE. What is not clear from the findings is whether this change in focus was based on a shift in teachers' values about what was important, or whether it provided a reason not to teach physical skills and rules that appeared to make them anxious before the PD.

Of the original 19 teachers who recognised the benefit for students' mental health and cognitive abilities, only three continued to argue that the main purpose of PE was to provide students with a break from more academic classroom subjects. The other 16 teachers continued to recognise the benefits of allowing student mental breaks, but were moving more towards recognising that this was a limited view of PE.

The shifts in understanding the purposes of PE were paralleled by changing views on the nature of PE. In contrast to initial perceptions of PE as primarily physical skill development, sport and games, teachers' post PD comments demonstrated broader and more multifaceted understandings of PE. Post PD, teachers understood the nature of PE to be associated with:

- the development of knowledge and skills associated with movement and sport, including understanding the tactical and some technical aspects of team games;
- physical activity, but not just physical activity; and
- movement as a vehicle to develop interpersonal skills.

While it was evident that teachers had begun to view PE as more than just teaching students physical skills to play games, teachers continued to be vexed by the relationship of PE to physical activity. A few of the lead teachers (four of ten) had begun to differentiate between the subject PE and more general physical activity that occurred during curriculum time. Eight teachers appeared to continue to view any movement opportunity that was provided as PE. So while the PD encouraged teachers to recognise that PE involved planning and links to curriculum, for these eight teachers sending their students for a quick run in the school playground, or playing a game of tag, still appeared to constitute a PE lesson.

Other teachers (five of the 25) appeared to be grappling with the mixed messages they were receiving about PE and physical activity. It appears that this confusion stemmed from the multitude of messages that teachers were being exposed to. Public discourses and the Ministry of Education's goals and guidelines (NEGs and NAGs) were encouraging teachers to get students more physically active. Advisers were suggesting that just getting them active did not constitute a PE lesson, and they also needed to plan to make sure the physical activity was educational.

Given the substantial body of PE literature (for example Almond, 1989, 2000; Culpan, 1996/97, 2000; Kirk, 1992; Ross, 2001, 2004; Siedentop, 2002; Tinning, Kirk, & Evans, 1993; Tinning, Macdonald, Wright, & Hickey, 2001; Tinning & McCuaig, 2006) emphasises the confusion and debate about what constitutes the nature and purposes of PE, it is not surprising that after eight or fewer days PD these teachers were also perplexed. It was unclear what this confusion means for the sustainability of changes in programmes and practices that have also resulted from the PD. The study raises the important issues of how shifts in the rhetoric of what constitutes PE translates into practice, and how long changes will be maintained when teachers continue to be confused about the nature and purpose of PE.

### ***Curriculum Knowledge – Knowing What to Teach***

This study provided insights, previously not studied in this way, into primary teachers knowledge of PE curriculum in New Zealand. The findings highlight shifts in teachers' curriculum knowledge, towards an alternative version of curriculum as it was presented in the PD. New understandings of PE appeared to support teachers to trial and adopt alternative PE approaches. However, these shifts appeared to be limited to a form of curriculum knowledge bounded by adviser interpretations and resources, and time allowances in the PD programme. The benefits and issues of developments in nation, school, and taught curriculum knowledge during this PD are discussed in more detail below.

### ***National Curriculum***

The evidence indicates that teachers did not perceive the curriculum to have been explicitly covered in the PD. The findings highlighted some broadening of teachers' knowledge about the HPE curriculum strands, but there was no evidence that other aspects of the curriculum had been addressed.

In contrast to the findings of the Education Review Office (ERO)(2001, 2007a, 2007b) and McGee, Harlow, Miller, Cowie, Hill, Jones et al (2003; 2004) this study indicates that teachers' knowledge of the 1999 HPE curriculum are limited, with 60% of those interviewed unsure of any of the strands, key areas of learning or the underlying concepts. The other 40% of teachers had a vague idea that Strand B: Movement Concepts and Motor Skills was the PE strand. The findings indicate that teachers made little or no use of the curriculum document in their planning for PE. Some could not work out what to teach (Jade - Interview 1) and one teacher thought it was too long (Fiona - Interview 1). It is also important to remember that for these teachers the HPE curriculum was the sixth 'new' curriculum that they were expected to implement in a period of less than eight years. The findings indicate limited opportunities for primary teachers to undertake ongoing PD associated with PE and more specifically HPE curriculum implementation. The result is teachers who are unclear about the New Zealand HPE curriculum.

Evidence in this study shows that the PD programme led to better understandings of the HPE curriculum document, even though it was not a major focus of the PD. It appeared that through curriculum links made

during the PD on the lesson and unit plans provided and modelled, and through the use of the CIA books, teachers had begun to see how the several strands of the HPE curriculum were linked. Some teachers (60%) recognised that they were able to address more than Strand B: Movement Concepts and Motor Skills, in their PE programme. The focus on using PE as a medium to develop interpersonal skills supported teachers to make connections between PE and Strand C: Relationships with Other People. The links with messages about physical activity appeared to persuade teachers to recognise the links between their current PE programmes and aspects of Strand A: Personal Health and Physical Development.

This is encouraging, but interviews with teachers and examination of planning produced little evidence that teachers had developed theoretical knowledge about the structural framework of the HPE curriculum, including the underlying concepts, key areas of learning, or all aspects of the strands and achievement objectives. It appeared that changes to teachers' theoretical knowledge of the curriculum was limited to fairly superficial changes in understandings that aligned to the aspects that were presented in the plans advisers provided. The findings suggest that changes to teachers' understandings and practices in PE had little to do with increased knowledge of the national curriculum. This raises the question of whether theoretical knowledge of national curriculum is needed to bring about change in classroom practice, or whether practical knowledge about what and how to teach is more useful. Alternatively, it could be argued that both are necessary.

### ***Curriculum of School Programmes***

The findings demonstrate that prior to the PD, school PE programmes were based on a multi-activity approach, with blocks/units of work focused on skill development for specific activities or sports (Penney, 1999; Siedentop, 2002). The programmes consisted of a range of sports and physical activities, known by teachers as topics, that students across all year levels repeated yearly. The findings support previous research (Siedentop, 2002, 2007; Ward & Doutis, 1999) that suggest that schools and teachers rely on the multi-activity approach for pragmatic reasons, such as limited access to equipment, lack of PE content knowledge, and what appeared in this study to be the prescriptive nature of the traditional school programmes.

In contrast, the draft long term plans and comments from teachers in this study reflected changing knowledge about what constituted a PE curriculum in primary schools. The multi-activity approach appeared to have been replaced in the way the ten lead teachers (who were responsible for developing the long term plan) conceptualised the content of the school programme. For example, the findings highlight that on paper at least, school programmes were about to become based on a curriculum-models approach, where the focus of each unit of work was embedded in either TGfU, Moving in Context and ABL (this is demonstrated in Appendix F). These PE curriculum models appeared to have become the 'new' focus for what teachers understood as a programme for learning PE in primary schools. This issue was further accentuated in the draft long-term plans, where three schools had identical plans. This signalled a lack of recognition, by both advisers and lead teachers, about the importance of developing context specific programmes, based around a broader understanding of PE curriculum approaches (see section headed Resources defining curriculum for further discussion on this).

While there may have been issues with the convenience of the multi-activity approach, shifts to a curriculum-based approach advocated in this PD raised some points for consideration. Of particular concern was the impression embedded in teachers' responses that TGfU, Moving in Context and ABL constituted the curriculum for PE. While these curriculum approaches appeared useful in supporting teachers to adopt alternative pedagogical approaches to teaching PE, they are but a few of the PE specific curriculum models that could have been addressed. For example, a Sport Education model could have been explored.

Despite the fact that the time frame of the PD challenged advisers to be selective about the content of the programme, the exposure to only a sample of approaches appeared to create a sense that these were the only approaches that could be used to teach PE. Although determining whether in-depth study is better than breadth is a consistent challenge for developers of PD (O'Sullivan & Deglau, 2006), choosing depth over breadth in this PD may have created an alternative, but not necessarily better, version of PE programmes for primary schools. Nevertheless, given the challenge of limited teacher knowledge, this is not an easy issue to resolve.

Without further PD opportunities, the curriculum-model approach to primary school PE programmes may become the new prescribed programme, replacing the multi-activity approach. Until more is known about the impacts of this alternative approach upon student learning and achievement, or whether teachers can sustain and develop a curriculum-models approach once adviser support is withdrawn, the usefulness of a change from the multi-activity approach remains a mystery. Further research will be needed to determine the long-term effects of the shifts in teachers' knowledge of school PE curriculum evidenced in this study.

### ***Taught Curriculum***

All teachers reported that the way they taught PE lessons had changed after working with advisers. The findings demonstrated that changes to teachers' lessons mirrored the sample lessons that they had been provided with in the PD. The focus on quality teaching during the PD, and the modelling of alternative approaches to teaching PE, appeared to support teachers to move beyond the formulaic lesson structure of warm-up, skill learning, game play, warm-down. In contrast to this traditional approach, teachers had begun to explore ways they could engage more students in PE lessons.

The wide range of learning intentions addressed in the sample lesson and unit plans had supported teachers to address a broader curriculum in their PE lessons. The findings highlighted that teachers had begun to talk about teaching lessons that involved students learning about interpersonal skills, strategic game play, decision-making, and problem-solving. This new focus to their teaching appeared to be based on using a games and/or moving in context approach as a foundation for changing the taught curriculum. All teachers, except for Rowland, found that by focusing learning intentions on more than physical skills and rules for sport through the use of games and movement education approaches, and getting students working in smaller ability groupings, students were more motivated about participating in PE lessons. Seeing changes in student participation, as a result of a modified approach to teaching PE, appeared to encourage teachers to value the PD and continue to use and advocate for the models provided.

The findings highlighted that when teachers were provided with model lessons, they were able to enact the curriculum in the different ways outlined above. However, there was little evidence that teachers had opportunities to develop a depth to their knowledge that would allow them to extend their lesson practice beyond what was modelled. For example, the findings showed that teachers had become reliant on the lesson plans provided to guide their practice. The model lessons, as mediational means, appeared to reduce teachers' confusion about the abstract curriculum content for PE lessons, and signalled concrete operational steps that teachers adopted to assist them to confidently teach PE lessons. And as discussed earlier this appeared to deskill rather than reskill them.

It is widely accepted in PD literature that to embed the above changes is a gradual and long-term process. In designing the PD, providers were constrained by time and limited opportunities to work with individual teachers. As a result it appeared that advisers provided teachers with the example lessons, supported them to trial them, and then provided feedback to 22 of the twenty-five teachers. However, there was no evidence to suggest that teachers were provided with opportunities to explore the planning and develop new units of work independent of adviser support. This appeared to contribute to teachers' perceptions that the lessons provided and modelled by the PE 'experts' (the advisers) were the 'right' and possibly only way to teach PE.

It appeared that teachers had grafted (Coburn, 2003) the new lessons, units and general pedagogical approaches and strategies, to their existing lesson practices without being provided with the opportunity to develop the knowledge and skills needed to alter the focus of what they actually taught across other aspects of the PE programme. An unexpected outcome of the model lessons may be that teachers would emphasise areas where they felt they had developed content expertise and de-emphasise or avoid teaching areas in which they had less knowledge (Carlsen, 1991; McNamara, 1991; Smith & Neale, 1991). An example was when Sally spent a whole term (10 weeks) teaching the same invasion game that was introduced by the advisers.

While these example lessons provided a starting point to support teachers to reconceptualise how to teach PE, the findings suggest, like the literature on effective PD (see for example Deglau & O'Sullivan, 2006;

Duncombe & Armour, 2004; Wilson & Berne, 1999) teachers would need ongoing, follow up support to extend their practices beyond the examples provided. The findings indicate that teachers would value further opportunities to access resources and ideas for other lessons and activities to support their practice. However, the short-term nature of the PD means that, like the teachers in a study by Tannehill, MacPhail, McMahon & NiMhuircheartaigh (2007), these twenty-five teachers may be forced to return to old practices when they move on to a topic not covered in the PD. Further study is required to explore how the PD impacted on teachers' knowledge and enactment of curriculum in areas/topics not addressed in the PD.

Thus, while the school programmes are under development and shifting towards a curriculum-model based approach, it is difficult to determine how all teachers would be positioned to enact school wide PE curriculum changes in their own classes. I would suspect that without additional support, either from lead teachers, or external advisers, teachers would be likely to resort to a multi-activity approach, supplemented by the units and lessons provided in the PD.

### ***Physical Education Content Knowledge***

In contrast to the effective PD literature that advocates a focus on teachers' knowledge of the subject content, and how students understand and learn it, (Armour & Duncombe, 2004; Armour & Yelling, 2004; Bechtel & O'Sullivan, 2006; Cohen & Hill, 2001; Guskey, 2003), the findings from this research suggest that teachers had limited opportunities to explicitly focus on developing their PE subject knowledge. In addition to the broad understanding of subject matter knowledge outlined in the preceding sections of the discussion, teachers ought to have had opportunities to develop a firm grasp of the content to be taught and learned in the context of the PE, including knowledge of the skills, central concepts, and principles to be learnt by the students (Chen & Ennis, 1995; Cochran & Jones, 1998; Grossman, 1990; Grossman, Wilson, & Shulman, 1989; Shulman, 1987; Siedentop, 2002, 2007; Ward, 2009). The findings indicate that teachers' trialled the teaching of new content as it was outlined in the model lessons, and yet there appeared to be an absence of opportunities for teachers to develop deep personal PE content knowledge.

The findings in this research demonstrate that knowledge of general pedagogical strategies and curriculum without the requisite PE content knowledge affects how teachers present tasks and develop content effectively to promote student learning. The literature supports this (Grossman, 1995; Werner & Rink, 1989). Examples from the findings of this research include teachers' ability to:

- *Accommodate, meet and challenge the learning needs of their students.* In the same way that student teachers struggled to construct developmentally appropriate progressions, explanations and tasks that match the learners' needs (Chen, 2004; Graber, 1995; Rovegno, 1993b, 1994, 1998; Sebren, 1995), the classroom generalist teachers who lacked confidence in and understanding of physical activities struggled to read and give appropriate suggestions and feedback to children's movement responses during actual lessons. For example, Tina and Jeanette presented lessons that were either too hard or too easy for their students. The lesson observation highlighted that they simply continued with the lesson without adjustment to make the learning more relevant, challenging or achievable for their students.
- *Be flexible in the design and delivery of activities.* This study confirms the work of other researchers (Carlsen, 1991; Leinhardt & Smith, 1985; McDiarmid, 1989) highlighting that when teachers have limited content knowledge they are less able to construct or modify activities to enhance the learning experience and achievement of students. For example Marg in her cricket lessons recognised the need to use ability groups, but did not understand how variations of the game could be adopted to enhance the learning experience and practice time for students. Instead of having one massed game of cricket, Marg could have set up six small games with modified rules.
- *Develop explanations and questions to students.* When teaching her students about throwing for distance Rachel accepted student responses such as "throw harder", and did not appear to have the requisite content knowledge to provide instructional advice as to how they might actually throw harder – such as ideas about force, and height, angle and speed of release.

Rachel and others (see the example of Culhane's questioning sequence in the findings) had difficulties with developing questions are comparable to findings by McNamara (1991) who indicated that this knowledge of a subject resulted in teachers using a more didactic approach which avoids pupil participation and questioning and which fails to draw on children's experiences.

- *Select resource material*, including their ability to critique texts and other teaching materials (Grossman, Wilson, & Shulman, 1989; McDiarmid, 1989). With the exception of Patricia, the teachers in this study appeared to adopt and replicate the resources (lessons, units and activities) without critique or adaptation to reflect their context or the Year level they were teaching. This lack of knowledge to critique may also have further implications as the primary school context is invaded by outside organisations offering resources and programmes to 'support' curriculum physical education.

The findings indicate that some teachers, such as Kim, Culhane and Jess, thought their own sense of having inadequate movement skills and knowledge of sports inhibited their PE content knowledge, and therefore their confidence to expand on and adapt resources and activities provided by the advisers. These teachers were concerned that they did not know the rules of the sports they had to teach, or how to teach the skills. With the exception of the four teachers who perceived themselves as experts, the remaining teachers all expressed concerns about their lack PE knowledge, by which it appeared they meant skills and rules, in some or all of the topics that they were expected to teach.

Given that this concern was expressed by 21 of the 25 teachers, and that there is wide agreement that all teachers require appropriate PE content knowledge to teach effectively (Romar, 1995; Werner & Rink, 1989), it is surprising that PE content knowledge was not specifically focused on in the PD. While restrictions on PD providers limited how much they could cover and forced them to be selective, the study raises questions about how much advisers' own confidence about and knowledge of PE content impacted on the content of the PD programme. The majority of advisers' background experience was as classroom generalist teachers, and they

themselves had little opportunity to develop PE content knowledge prior to working with teachers in schools.

This study reinforces ongoing concerns in the international literature (Tannehill et al, 2007; Siedentop, 1989, 2000, 2002, 2007; Ward, 2009) relating to the inadequacy of current teacher education programmes (pre- and in-service) to provide primary school teachers with the PE content knowledge to ensure student learning in PE education is effective.

### **PEDAGOGICAL CONTENT KNOWLEDGE**

PE literature (Chen, 2004; Graber, 1995; Griffin et al., 1996; McCaughtry & Rovegno, 2003; Rovegno, 1993a, 1993b, 1994, 1998; Sebren, 1995) recognises the important role PCK plays in teachers' ability make the PE content accessible to the diverse interests and abilities of learners. PCK requires the blending of subject matter knowledge, pedagogical knowledge with knowledge of context (Amade-Escot, 2000; Borko & Putman, 1996; Carter, 1990; Gess-Newsome, 1999a; McCaughtry, Sofo, Rovegno, & Curtner-Smith, 2004; Shulman, 1986, 1987; Tsangaridou, 2002, 2006). It is the ability to integrate the different knowledge domains that allows teachers to transform content knowledge into classroom experiences that help students learn.

It is apparent from the findings that there were shifts in teachers' knowledge of subject matter (particularly curriculum knowledge), and general teaching approaches. However, in line with previous research (Romar, 1995; Siedentop & Tannehill, 2000; Werner & Rink, 1989) the noticeable lack of focus on the developing of teachers' PE content knowledge appeared to limit teachers' ability to integrate knowledge in flexible ways to enhance student learning. As Siedentop (2002) suggests and the findings of this study highlight "you can't have pedagogical content knowledge without content knowledge, and all the advances in pedagogy in physical education can't change that simple truth" (p. 368). The findings and preceding discussion demonstrate that the development of pedagogical skills and broader knowledge of the nature, purpose and curriculum supported teachers to feel more confident as teachers of PE. However, this knowledge appeared to be redundant when teachers were not provided with opportunities to increase their PE content knowledge. Teachers' knowledge did not appear to be developed during the PD in

ways that supported them to develop their PCK and, therefore, the ability to know what to teach as well as how to best teach it.

In line with the work of Poulson (2001), Tsangaridou (2002), and Appleton (2003), the research undertaken with the twenty-five classroom teachers in this study highlights the complexities associated with the development of PCK for the generalist teacher during in-service PD programmes. Although a growing body of studies (Amade-Escot, 2000; Rovegno, 1993a, 1993b, 1995, 1998, 2003; Tsangaridou, 2002) have examined how pre-service PE teacher education students acquire and enact PCK few studies have focused on how classroom teachers already teaching full time develop PCK. The findings of this study raised the important issue of how material cultural tools (PD resources, content, and delivery) used mediated the development of PCK during in-service PE-PD programmes for classroom teachers. As Sebren's (1995) study of pre-service PE teachers found, the research in this study suggests that primary teachers may need opportunities to learn more about other areas of the knowledge base particularly PE content knowledge, before being able to integrate knowledge in ways that allow them to develop PCK.

Finally, research into teacher PCK in primary schools has focused largely on teachers' knowledge as it relates to one subject area, and little appears to have been done to explore the complexities associated with developing PCK when teachers are working across multiple subjects. The findings show that the context of the primary school, and the requirement to teach numerous subjects, meant that the teachers in this study were required to have content knowledge (and PCK) for all subjects, which makes the development of PCK more complex (Grossman, Wilson, & Shulman, 1989; McNamara, 1991; Shulman, 1987). Further research into knowledge development for teachers in primary schools would assist teacher educators to create connected knowledge building experiences that support teachers to explicitly develop all aspects of their knowledge base, and apply their knowledge in flexible and integrated ways that enhance student learning in PE.

## **CHAPTER SUMMARY**

This chapter has outlined an examination of findings about how the Model 2 of the *Physical Activity Initiative* PD programme impacted on a sample of teachers' knowledges for teaching PE. The discussion has highlighted the systemic issues that appeared to impact on the outcomes of the PD programme. Central to the discussion has been an examination of how the needs of teachers as learners were addressed by the design and delivery of the PD, and what impacts the PD had on teachers' knowledge development.

## **CHAPTER SIX – CONCLUSION**

This chapter starts with a brief summary of the study. The conclusions of the study are summarised, followed by discussion about how the findings relate to the broader issue of teaching PE in the NZ context. Finally, areas for further research and practices are considered.

### **THE STUDY**

The current research focused on teaching and learning of PE in primary school settings in New Zealand. Specifically, it investigated the impacts of Model 2 of the *Physical Activity Initiative* PD programme designed to enhance a sample of primary classroom teachers' knowledges and practices in curriculum PE. The project had two key aims: first, to develop an understanding of the knowledges primary teachers use to teach PE, prior to a one-year professional development (PD) programme; and second, to evaluate the impacts of a PD programme on knowledges associated with teaching PE, and the complexity of subject specific knowledge development for generalist teachers. Specifically, the impact of Model 2 of the *Physical Activity Initiative* professional development (PD) programme (Ministry of Education, 2005) on primary classroom teacher's knowledge and practice was investigated.

Working from an interpretive perspective, influenced by sociocultural theory, the data collected included teacher interviews and questionnaires, lesson observations and document analysis. Theories of teacher knowledge and understandings of effective PD provided a framework for data analysis. In contrast to most previous studies that have involved the researcher as the instigator and the deliverer of the intervention, this research involved me as the outsider trying to gain an outside-in and inside-out perspective. This chapter explores the evidence base, summarising teachers' experiences of the PD programme that they were involved in, before outlining the impacts of the PD for teachers' knowledges and practice in PE.

### **CONCLUSIONS**

The findings highlighted how PD that encouraged teachers to utilise the pedagogical strategies previously reserved for the classroom in their PE

lessons, such as establishing learning intentions, questioning and ability grouping, assisted teachers to feel confident and motivated to teach PE. The findings also explored the impacts of the PD on teachers' knowledge of the nature, purpose, and curriculum of PE. Although there were many positive impacts as a result of the PD, the findings and discussions indicated that there is a need to consider how PE-PD for primary teachers can be designed differently to enhance teacher learning and, therefore, the learning outcomes for their students.

This study emphasises the complexity of designing and developing a PD programme that supports primary teachers to understand and deliver PE in flexible and meaningful ways to their students. The findings and discussion have pointed towards three major conclusions, to do with (i) understanding the teacher as learner, (ii) the role of resources in shaping teacher learning, and (iii) knowledge building experiences.

### **UNDERSTANDING THE TEACHER AS A LEARNER**

The findings and discussion outline that the design and delivery of the PD did not always recognise the diversity and needs of these twenty-five teachers as learners. The variety of teachers' responses to the PD demonstrated that, like the students they teach, the teachers benefited from processes that recognised the contexts in which they work and their individual learning needs. Where PD was focused primarily on improving the learning outcomes for school-aged children, the teacher appeared as a conduit through which improved practices would be enacted. However, the findings and discussion suggest that in PD programmes the teachers as learners should be the central focus of the teaching and learning process/programme, if the desire is to see improvement in education. The literature supports this (Ball & Cohen, 2008).

Teachers' opportunities to learn to be teachers of PE were enhanced when their learning opportunities centred on them playing the role of the school-aged learner. The findings highlight that teachers responded positively to being able to "play the games", "do the activities" and then "take them straight back to the classroom" to replicate with their own students. Paradoxically, this enhancement had a negative effect. The findings, and the corresponding discussion drew attention to the inflexible ways in which this led the teachers to use these same activities with their students. It would appear that while playing the role of the

school-aged learner, teachers were not provided with opportunities to understand the ideas underlying the rationale behind the task and the decisions made by the teacher (in this instance the adviser) during the delivery of the task. An inability to make explicit the reasoning behind the sequence, flow, questioning, and feedback of the lesson/activities, appeared to limit teachers' ability to modify lessons or individual activities in ways that recognised the needs of school-aged learners in their own classroom.

Finally, when a nationally standardised PD programme was used, there appeared to be little recognition, and accommodation made for the assorted prior experiences, practices, and knowledges of the twenty-five teachers Involved in this study. It is important to note that each adviser was working with large numbers of teachers (anywhere between 100 – 150+) spread across a wide variety of schools (between eight -12 schools per adviser), and that the twenty-five teachers in this study only represented a small sample of those involved in the PD during 2006. This underlies the difficulty in designing PD that is responsive to each school and teachers' needs in a PD programme that consists of eight days across a school year. However, when advisers were advocating that teachers design learning experiences for their students that are student-centred, and responsive to the needs of the group and individuals in it, then it appeared paradoxical that the PD programme was not designed in ways that mirror this.

### **THE ROLE OF RESOURCES IN SHAPING TEACHER LEARNING**

Resources used in the PD acted to both reskill and deskill the twenty-five teachers in this study, resulting in positive and negative effects. On the one hand it gave teachers a range of resources to use, on the other hand it discouraged teachers' autonomy as curriculum decision-makers.

The teachers in this study found the lesson, unit, and long-term plans invaluable in supporting them to teach PE, and suggested that they would appreciate more. In a complex context where these teachers were dealing with the pressures of workload, time, resourcing, multiple PD initiatives and, for some, their own levels of PE inadequacy, the pre-packaged PE curriculum resources offered a 'quick fix' solution. This was not surprising given that as generalist primary classroom teachers they were expected to design and deliver learning opportunities across seven

curriculum areas, and their teacher preparation courses and subsequent PD opportunities have provided limited time for learning to teach PE.

Designed to enhance and shape student learning in PE, the resources such as model activities, games, full lessons, unit and long-term plans, appeared to provide teachers with opportunities to trial alternative activities and transfer their classroom based pedagogical strategies into the PE context. The research findings emphasise that most teachers felt more motivated and confident in their teaching of PE when they were working from the resources. In utilising the resources provided, teachers learnt and were able to replicate, indiscriminately, the activities, games and lesson sequences they had been given, shown and participated in. These resources acted to reskill the teachers and extend their repertoire of activities.

However, reliance on externally provided, pre-packaged resource material, suggested that the teachers, with the exception of Patricia, had not been encouraged or supported to develop an understanding of how to use the resources flexibly to support the needs of their students. The resources provided by the advisers in many ways appeared to act like scripts for teachers to follow and, in doing so, unintentionally deskilled the teachers. The resources, designed to provide guidance for teaching to enhance student learning, did not appear to be utilised to provide an educative focus for teacher learning.

The use of the unit and long-term plans, in conjunction with the curriculum models presented shaped what teachers understood as the curriculum of PE. When long terms plans were developed with direct links to the example unit plans the teachers have been provided with, these resources acted to determine and define what constituted school PE programmes. This approach did not allow for contextual and community difference to be taken into account. In contrast it suggested that the same PE programme could operate throughout the country.

### **KNOWLEDGE BUILDING EXPERIENCES**

The PD investigated in this study supported the twenty-five teachers to develop their knowledge about the use and application of general pedagogical strategies in the PE context, and allowed them opportunities to explore alternative understandings of the nature, purpose and curriculum of PE. These opportunities supported teachers to feel more

competent, motivated and confident in their ability to teach PE. However, the findings and discussion suggest that enhancing knowledge of general pedagogical strategies, nature, purpose and curriculum without developing teachers' PE content knowledge limits teachers' ability to apply knowledge flexibly to enhance the learning outcomes for students.

Providing opportunities for teachers to apply strategies previously reserved for the classroom helped the twenty-five primary teachers to view PE as equivalent to other subjects and feel more confident as teachers of PE. The focus on adopting the use of learning intentions, questioning and ability grouping that was apparent in the model and sample lessons assisted teachers to explore alternative ways to teach PE. When using these strategies teachers, with the exception of Rowland, recognised that their lessons were more inclusive, resulting in higher levels of student engagement and participation. The changes in student attitudes confirmed for the teachers that it was appropriate and important to transfer their knowledge of sound classroom practices into the PE lessons. However, the teachers' ability to fully and effectively incorporate these pedagogical approaches was hindered by limited PE content knowledge. This impacted on the teachers' ability to recognise level/age appropriate learning intentions, develop questions and questioning sequences that extended student understanding, and to use ability grouping across a wide range of contexts.

Teachers' newly developed knowledge of the nature, purpose and curriculum of PE were bounded by the confines of the PD programme and isolated from broader discussions about the historical, social, political factors that shaped their understandings of PE. Teachers' rhetoric about the nature and purposes of PE was extended during the PD, although most continued to be confused about the difference between PE, fitness, sport and physical activity, which may have implications for the sustainability of changes to practice.

The descriptive nature of 1999 HPE curriculum accentuated the fuzziness surrounding what constituted the content of PE in NZ primary schools. Without detailed suggestions for programme content, teachers were unsure of how to link the national curriculum to their school programmes and practice, which, in most instances, resulted in teachers who were unsure what they were to teach. The resources provided by advisers supported teachers to recognise other strands of the 1999 HPE

curriculum, without assisting teachers to understand the philosophical underpinnings of the national HPE curriculum. The defining of the school PE curriculum, through long-term and unit plans, provided in the PD supported teachers to be clearer and more confident about what they 'had to' teach in PE. The selection of content for the PD programme appeared to create an alternative, but not necessarily better, version for PE programmes in primary schools.

Teachers were able to enact changes to their lessons when they were supported by resources and models provided by the advisers. Teachers were provided with opportunities to develop enough PE content knowledge to replicate the model lessons. However, it was apparent that teachers did not always have adequate PE content knowledge to be able to adapt or modify the model lessons prior to or during the lessons to better meet the needs of their students. Few teachers moved beyond the models provided, and in the short time frame of research, it was difficult to determine whether teachers would be able to sustain change across the PE topics not covered in the PD, or whether they would resort to old practices. Restricted understandings of PE curriculum, coupled with limited PE content knowledge, may inhibit the potential of the HPE curriculum, and make it impossible for teachers to implement the curriculum in flexible, meaningful and relevant ways in their own contexts.

Another conclusion is that these primary teachers needed opportunities to learn more about other areas of the knowledge base, particularly PE content knowledge, before being able to integrate knowledge in ways that allowed them to develop pedagogical content knowledge (PCK). Primary teachers needed PD opportunities that allowed them to develop knowledge across all domains of teacher knowledge, while also exploring options to use that knowledge in integrated and flexible ways. However, in order for teachers to integrate knowledge forms in their classroom practice, connections between knowledges needs to be made explicit in teacher education programmes, both pre- and in-service.

## **A BROADER ISSUE**

While not directly explored in this study, the findings are relevant to a broader issue relating to the sample of primary school teachers and PE in

the New Zealand context. The issue is the impact of the HPE curriculum, in this study the 1999 curriculum (ministry of Education, 1999), on teachers' and teacher educators' understanding of what constitutes the content of PE.

An initial and ongoing issue in this research, and in the field of PE across the board, has been defining the content of PE. (Siedentop, 2002; Tinning, 2002). The content of PE in the primary school, nationally and internationally, has traditionally centred on motor skill development, fitness and movement education in the form of games, sports, dance, gymnastics, fitness and aquatics. However, the NZ HPE curriculum (Ministry of Education, 1999) requirements made more explicit the need to address social/emotional health, interpersonal skills, socio-critical understandings of movement in school programmes, without providing explicit details about the content that would be covered in a school programme. As this research has illustrated, teachers have difficulty understanding what this means for what they teach in PE.

This confusion makes PE vulnerable. It is not surprising that teachers were willing to adopt programmes provided by an outside 'expert' who provided them with 'the answers'. This occurred, in this study, when the directions on what constitutes a school PE programme and lessons was determined, by advisers, in line with only a sample of curriculum models. Of concern is that uncertainty about what to teach opens the doors to all sorts of providers, not all Ministry of Education approved advisers, to provide resources and programmes. Teachers, who have limited access to resources and support to advise them of the quality and curriculum relevance of externally provided programmes (MacDonald, Hay, & Williams, 2008), may fall into the trap of accepting programmes designed and delivered by groups and individuals who have limited knowledge of or interest in curriculum PE.

## **IMPLICATIONS**

This study draws attention to some areas for consideration in relation to my own and others' understandings, practices and research in the areas of PD, PE and teacher knowledge. These are outlined below, firstly focussing on broader implications for practice and research, before describing the effects on me as a teacher educator.

## **IMPLICATIONS FOR PRACTICE AND RESEARCH**

The findings of this study suggest that, in the design and delivery of PD for primary teachers of PE, the following should be considered. Firstly, developers of PD ought to focus on teachers as learners, learning to be teachers of PE. By having teachers learning as the central focus of the design and delivery of PD, the broad and diverse learning needs of teachers are more likely to be addressed. In doing so, the learning needs of school-aged children are more likely to be met.

Secondly, evidence from the research presented indicates that primary school teachers benefit from professional learning opportunities that allow for the transfer of pedagogical strategies and skills from the classroom to the PE context. However, these learning opportunities should be balanced with opportunities to develop content knowledge associated with a curriculum or subject area. PE-PD for primary teachers needs to consist of a collection of connected knowledge building experiences associated with PE subject matter, pedagogical strategies, and understandings of learners and learning. The development of connected knowledge building experiences in PD programmes may require PD developers to consider alternative models and approaches, and funders of PD to recognise the necessity for extended time and funding to allow for change to occur. Re-imagining, trialling and evaluating alternative models for the design and delivery of in-service PE-PD for primary teachers with this connectedness in mind is an area that warrants further investigation. Connected knowledge building experiences would support teachers to use and integrate knowledge in flexible ways.

Thirdly, in line with this broader focus on the design and delivery of PD, teacher educators have to consider how to create resources with teacher learning in mind. Researchers have begun to explore how to design educative curriculum resources that support teacher learning (Apple & Jungerk, 1990; Davis & Krajcik, 2005; Ball & Cohen, 1996; Schneider & Krajcik, 2002). However, this is not an area that PE researchers appear to have tackled yet. The findings of this study indicate that PE-PD providers (and initial teacher educators) could consider alternative approaches to designing and delivering resources that enhance teacher learning and, therefore, the learning experiences of students in more sustainable ways. In the last seven years, teacher educators in science

education (Davis & Krajcik, 2005; Schneider & Krajcik, 2002) have designed and trialled resource materials that they believe are more educational for teachers than the pre-packaged resources previously used. Their research suggests that

*Resources should “speak to” teachers about the ideas underlying the tasks rather than merely guiding their actions (Remillard, 2000, p.347); in doing so, the materials should educate teachers while promoting their autonomy (Shkedi, 1998) and help teachers to make decisions about how to adapt resources. Making rationales visible is one way that resources could move beyond simply adding new ideas to teachers’ repertoires and, instead, help them integrate their knowledge base and make connections between theory and practice – taking advantage of how resources are situated in teachers’ work. Doing so would help teachers apply their knowledge more flexibly (Davis & Krajcik, 2005, p. 5).*

My research shows that the resources used in the PD did ‘speak to teachers’ but in ways that developed and narrowed their actions. It is with this in mind, that PE teacher educators (pre- and in-service) could question their current use of resources, and the way in which the resources mediate teacher learning. Had the resources used in this PD been developed to be focused on teacher learning as well as student learning, then the impacts may have been different.

In addition, teacher educators need to consider alternative ways to engage teachers in model lessons and activities that do not position the teacher in the role of the school-aged student. How to redesign such resources and learning opportunities, and the impacts of these on teacher learning, requires further research both in pre and in-service teacher education programmes.

Fourthly, and related to the previous point of implication, designers of PD need to be wary about how influential their decisions regarding content selection are on the way in which teachers interpret and practice PE. In this study where a focus on *Teaching Games for Understanding*, *Movement Education*, and *Adventure Based Learning* form the basis for teachers learning experiences, the findings suggest that teachers now perceive these approaches to be the curriculum content for their school programmes. Thoughtful selection of content and articulation of this as only part of what PE can involve, needs to be made clear otherwise PD is in danger of shaping PE in new, yet still narrow ways. Further research is needed to determine if teachers can sustain and develop a curriculum-

models approach once adviser support is withdrawn, and the effectiveness of a curriculum-models approach to school programming.

In line with this, though not exclusively the responsibility of PD providers, there is a need to clarify what the content of PE is in the NZ context. I am not suggesting that a prescriptive curriculum is necessary but the findings of this study suggest that teachers and teacher educators would benefit from materials that assist in clearly articulating the content for PE in the primary school. *The New Zealand Curriculum* (Ministry of Education, 2007) currently being implemented in primary schools, has further reduced opportunities for clarifying the content of PE, by abbreviating the information regarding HPE from the original 64 page document (1999 HPE curriculum), to a mere two page essence statement. How teachers make sense of PE from these two pages, while also being asked to understand and implement other 'new' aspects of the 2007 *New Zealand Curriculum*, is an open question, which has not yet been explored. This implication is not restricted solely to the subject of PE.

Finally, the funding providers for PD need to recognise that sustainable change takes time (Fullan & Hargreaves, 1992). The study also highlights how primary teachers who are responsible for teaching across all learning areas, and have limited access to subject specific PD (both pre and in-service) are more likely to become reliant on outside experts to design activities, lessons and units that may not be contextually relevant. As is evidenced by the changes to the knowledges and practices of the twenty-five teachers in this study, an eight-day PD programme is not sufficient to allow teachers to use their new-found knowledge in flexible ways. PD programmes need to be funded in ways that provide primary teachers with extended pre-service and on-going in-service learning opportunities in PE.

### **IMPLICATIONS FOR MY OWN PRACTICE**

As with many PE pre-service teacher educators in NZ, I was trained to teach PE in secondary schools, yet I am now responsible for HPE courses for primary teacher education students. This study has allowed me to develop an evidence base on which I can draw during my interactions with the students I teach, primary teachers in local schools, and the PE advisors attached to the University of Waikato. Moreover, the challenges

of designing and delivering a pre-service programme that meets the needs of future primary teachers have been further increased as a result of the investigation undertaken in this thesis. In particular the study has challenged me, and as a result my colleagues, to:

- Debate the content and focus of our thirty-six hour course. How do we design a programme that encourages teachers in training to make connections between pedagogical approaches and subject matter, while still providing opportunities for them to develop the content knowledge needed for them to design and deliver PE in flexible ways in the primary school setting? Although this is not a new debate for our HPE team, more like a never ending discussion, the study has challenged us to consider what enduring understandings (McTighe & Wiggins, 1999) and knowledge our primary teachers need to support them now and in the future.
- Consider what purpose our exemplar lesson and unit plans serve. We recognise that they do support our students to make sense of what planning for teaching and learning in PE looks like. However, we have begun to deliberate about how to develop resources that do not just guide the students in how to teach PE, but work in more educative ways. That is, resources that allow our students to understand the rationale behind the aim of the unit, make links to broader issues for school students, and provide a sequence and flow for the lessons.
- Explore alternative ways to demonstrate or model teaching PE that does not position the teacher education students in the role of the primary school aged learner. Currently we endeavour to make our rationale and decision-making explicit with in-depth debriefs at the end of the modelling. However, this study raised questions about how effective this approach is, which requires a rethink of how we view the student teachers as learners, learning how to teach PE.

Further, as a specialist physical educator I, along with many colleagues, have been less than complimentary about the ability of primary generalist teachers to deliver quality PE. However, this study has provided me with greater insight into the complex context in which primary teachers operate. I have come to believe that perceived

inadequacies in primary teachers' knowledges and practices for PE are a reflection of the restrictive and limited pre- and in-service PD programmes that this group of teachers received. I suggest that before we, the PE teacher educators, judge the quality of PE in the primary school, we should recognise the role we play in limiting opportunities for primary classroom teachers to develop their knowledges and practice.

## **LIMITATIONS OF THE STUDY**

I acknowledge that there are a number of limitations in the research, particularly in the methods of data collection and analysis, as well as my own personal beliefs, attitudes, and values.

Firstly, there have been some methodological issues that have limited the study. The data for this study were gathered as part of a one-year Ministry of Education evaluative contract (Petrie, Jones, & McKim, 2007). The scope of the contract provided access to teachers from ten schools across four parts of New Zealand, allowed me to work with teachers from diverse communities (socio-economically, locality) and to explore how variations of a PD programme impacted differently. However, in contrast to the benefits of gathering data in a contract, this process also proved to be limiting. The one-year time frame provided opportunities to explore the changes to teacher practice throughout their involvement in the PD. However, it would have been beneficial to continue data collection for an extended time, in order to investigate the sustainability of the change process. The large sample size, the spread of the schools throughout the country, coupled with the short time frame demanded by the contract, restricted opportunities to access teachers after the phase two interview for checking of interview data, and did not allow time to revisit teachers for additional interviews and observations or to examine the sustainability of the changes. This study could have been enhanced by multiple observations, and further interviews with the teachers and their students.

Finally, I acknowledge that my role in the study was neither impartial nor detached. Clearly, I thought that there was an issue in the way that PE was taught in the primary school, and had expectations for what support primary teachers may need from a PD programme in order to improve their practices, otherwise I would not have chosen to research

this topic. As much as one seeks to view the process of data collection and analysis in unbiased ways, it is improbable that this can always be achieved. To reduce the impact of these issues, a range of measures were taken, including: engaging in regular conversations with supervisors and colleagues and revising the data on several occasions.

## **CONCLUDING COMMENTS**

This research, *Teaching Physical Education: Primary School Teachers as Learners*, emphasised that promoting teacher learning through PD is complex. Given that no research was located, nationally or internationally, that had previously explored the impacts of PD on a group of in-service classroom generalist primary teachers' knowledges, this study makes a unique contribution to the fields of PE and PD. This study extends the international PE literature by assessing the impacts of PD on in-service primary teachers as they engaged in a PD programme that covered a range of PE curriculum models and pedagogical practices. It moves understandings of PE in New Zealand primary schools beyond the unsatisfactory anecdotal data that have until now formed the evidence base for policy and practice decisions.

This research demonstrated that primary school teachers gained benefit from PD opportunities that allowed for the transfer of pedagogical strategies and skills from the classroom to the PE context. However, there was evidence that these learning opportunities needed to be balanced with opportunities to develop PE content knowledge.

Consequently, it is theorised that PE-PD for primary teachers needs to consist of a collection of connected and explicit knowledge building experiences associated with PE: its nature, purpose, curriculum, content, and pedagogical strategies. It can be further hypothesised that effective PE-PD design would support teachers to blend these knowledges in ways that allow them to connect with their own prior experiences and develop appropriate learning experiences for their particular students. These theoretical assumptions were borne out in the PD and its impacts.

The research findings indicated that PD resources provided teachers with examples of practice and, as such, they had the potential to enhance "quality" PE learning and teaching. The study drew attention to the role resources played in standardising PE in primary schools, thus advancing

PE teaching, yet restricting teachers' broader knowledges and limiting their range of practice in PE. The findings of this study challenge PD providers (pre- and in-service) to consider the educative role of resources and the ways resources can be used to support teachers to become independent practitioners who utilise outside 'experts' without becoming totally reliant on them.

Finally this study illustrates the importance of recognising the teacher as both learner and teacher. It is imperative that teacher learning sits alongside student learning as a central aim for PD programmes, since teacher learning is the foundation for changes in learning outcomes for students.

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# APPENDICES

## APPENDIX A – SCHOOL INFORMATION

School One was a rural decile 8 contributing school with a roll of approximately 100 students who identified as New Zealand Pakeha (89%), South African (6%) and Māori (5%). The school employed five classroom teachers, one of whom was a teaching deputy Principal.

School Two was a decile 5 full primary school (Year 1-8), with a roll of approximately 600 students. The school was situated in a satellite town adjacent to a major city, and had an ethnic composition of 88% Pakeha, 10% Māori, and 2% from other ethnic groups. Mud River School employed twenty-five classroom teachers.

School Three was a decile 7, full primary school (Years 1 – 8) with a roll of approximately 90 students. The school was situated in a major New Zealand city, and had an ethnic composition of 77% New Zealand Pakeha, 20% Māori, and 3% Tahitian. The staff consisted of five female classroom teachers - three in the junior syndicate and two in the senior syndicate, with a male Principal.

School Four was a decile 7 contributing school with a roll of approximately 250 students. The school was situated in a satellite city adjoining a major New Zealand city and had an ethnic composition of 45% Pakeha, 14% Māori, 22% Asian, 5% African, 5% European, 3% Middle Eastern, 3% Samoan, 2% Tongan and 1% Cook Island. The school employed eleven classroom teachers.

School Five was a decile 10 full primary school (Years 1-8) with an approximate roll of 20 students. While classified as rural, it is worth noting that its location meant that it attracted more students from a local township, which meant that students did not all live in rural settings. The school had an ethnic composition of 71% Pakeha and 29% Māori. It was a small school with a female Principal and two female classroom teachers. The school was divided into two classes; a class of Year 1-3 and a class of Year 4–8. During the research period, the Principal frequently delivered physical education (PE) to the Year 1–3 classes.

School Six was a decile six integrated full primary school with a roll of approximately 400 students. The school, central to a major New Zealand city had an ethnic composition 69% New Zealand Pakeha, 15% Māori,

8% Asian, 4% Filipino and 4% Pasifika. Stadium School employed fifteen classroom teachers and in 2006, the school had an Acting Principal.

School Seven was a full primary school, situated in a rural community, with a roll of approximately 100 students and an ethnic composition of 98% Māori, 2% New Zealand Pakeha. The school had one Rumaki (Māori immersion) class and four mainstream classes. While rurally based, Waterfall had some bus students who came from an urban area. In 2006, the school had a decile rating of 3, and employed five female teachers.

School Eight was a decile 1 full primary school with a roll of approximately 160 students. The school was situated close to the boundary of a satellite city, adjoining a major metropolitan centre and had an ethnic composition of 95% Māori, 1% Samoan, 1% Tongan, 1% Middle Eastern, and 2% from other ethnic groups. The school employed six classroom teachers. Students, at the school, could choose to be taught in a mainstream, bilingual or full Māori immersion (Te Ruma Rumaki) class.

School Nine was a contributing school with a roll of approximately 500 students. Situated at the centre of a satellite city in a major metropolitan area, the school had a decile rating of one, and an ethnic composition of 24% Māori, 29% Samoan, 17% Tongan, 22% Cook Island, 6% Niuean, 1% New Zealand Pakeha and 1% other ethnic groups. Airport School employed twenty-two teachers, was situated in a low socio-economic area, and offered both mainstream and bilingual classes to students.

School Ten was a decile 10 contributing school with a roll of approximately 120 students. The school was situated on the outskirts of a satellite city adjoining a major city, and had an ethnic composition of 91% Pakeha, 6% Māori, 2% Samoan, and 1% from other ethnic groups. Otter School employed eight teachers, all of whom were female. There were five classroom teachers, two teaching syndicate leaders and a teaching deputy Principal (DP).

## APPENDIX B – TEACHER INFORMATION

Teachers Pseudonym	Other Roles	Teaching Experience	PE in ITE	In-service PD (PE) <sup>7</sup>	Perceived ability to teach PE
Isobel	Sports coordinator	6-10yrs	Between 75-100hrs	Multiple courses on teaching PE (lead teacher)	Intermediate
Mere	Lead teacher, Teacher in charge of health	6-10yrs	Less than 40 hrs	A course to improve personal movement skills	Beginner
Bronwyn	Syndicate leader (Junior School)	15+yrs	Less than 40 hrs	A course on teaching PE, and Jump Jam training	Intermediate
Culhane	Nil	15+yrs	Less than 40 hrs	A course on teaching PE	Beginner
Rachel	Nil	15+yrs	Between 75-100hrs	Multiple courses on teaching PE, and on personal movement skill development	Intermediate
Louise	Nil	0-5yrs	Less than 40 hrs	A course on teaching PE	Intermediate
Ruby	Part time Lead teacher	6-10yrs	More than 100hrs.	No official courses but referred to extensive experience in sport and coaching	Expert
Marg	Nil	0-5yrs	Less than 40 hrs	In school support about ideas for PA	Beginner
Pip	Lead teacher	0-5yrs	Less than 40 hrs	A course on teaching PE (lead teacher), and a course on running school wide PA events	Intermediate
Linda	Lead teacher	6-10yrs	Between 75-100hrs	Lead teacher HPE curriculum implementation	Expert
Katie	Nil	0-5yrs	Between 40-75hrs	Some 'games' training from the RST	Beginner

<sup>7</sup> In-service PD relates to all PD the teachers identified as relating to PE (as they defined PE prior to the intervention). This does not relate to PD they received as part of the Model 2 PAI intervention.

Jade	Teacher release for PE	15+yrs	Less than 40 hrs	Multiple courses on teaching PE, including HPE curriculum implementation	Intermediate
Patricia	Lead teacher	0-5yrs	Between 40-75hrs	A course on increasing school wide PA	Intermediate
Jess	Nil	0-5yrs	Less than 40 hrs	A course on teaching PE	Beginner
Kath	Syndicate PE leader	15+yrs	Between 75-100hrs	Multiple courses on teaching PE, and on personal motor skill development	Intermediate
Hamish	Lead teacher	15+yrs	More than 100hrs	A course on teaching PE (lead teacher)	Intermediate
Tina	Nil	6-10yrs	More than 100hrs	A course on teaching PE, and extensive experience in fitness industry	Expert
Jeanette	Nil	0-5yrs	Between 40-75hrs	Multiple courses on personal motor skill development	Intermediate
Leigh	Lead teacher	15+yrs	Less than 40 hrs	A course on teaching PE (lead teacher), and courses on sports coaching	Intermediate
Rowland	Syndicate PE leader. Previously teacher in charge of sport	15+yrs	More than 100hrs	A course on teaching PE. Extensive experience in elite sport and coaching	Expert
Fiona	Nil	15+yrs	More than 100hrs	More than 100hrs and HPE curriculum implementation	Intermediate
Bernie	Lead teacher	6-10yrs	Less than 40 hrs	HPE curriculum implementation	Intermediate
Kim	Lead teacher and sports coordinator	0-5yrs	Less than 40 hrs	Sports coordinators day	Intermediate
Berta	Lead teacher, HPE curriculum leader	15+yrs	Between 40-75hrs	Multiple courses on teaching PE (lead teacher) and sports	Intermediate

				coordinators training days	
Sally	In charge of some sports events	15+yrs	Between 75-100hrs	Multiple courses on teaching PE	Intermediate

## **APPENDIX C – DRAFT INTERVIEW QUESTIONS**

### **Teacher Interviews**

All interviews begun by the interviewer introducing the context to the teachers. This included the:

- purpose of the interview, and how the information will be used;
- use of the tape recorder;
- participants right to refuse to answer any particular question;
- participants right to turn the tape recorder off at any stage in the interview;
- opportunity for teachers to ask any questions about the interview/process before the interview begins.

The end of the interview included a debriefing which allowed the interviewer to mention some of the main points learnt from the interview. At this time the teacher was invited to comment and provide feedback. The interview could thereafter be concluded by the interviewer informing the participant that they had no further questions and inviting the teachers to bring up any questions, concerns or thoughts that they had. This gave the teachers the opportunity to deal with issues he or she had been thinking about during the interview.

The initial teacher interview schedule was developed after analysis of the pre PD teacher questionnaire. Many of the questions provided the opportunity for the teachers to elaborate on the information that they provided in the survey. However it was intended that the following questions guided these interviews.

- Describe your own experiences and knowledge (school, teacher education, in-service PD and extra curricula) of PA and PE, prior to the introduction to the PA initiative?
- Describe what you currently offer your students for PA/PE?
- What teaching strategies/methods do you currently use to teach/deliver PA/PE opportunities to your students?
- How would you describe your student current movement skill levels? How do you gather and use student achievement data for making decisions about PA/PE?

- What are your students' attitudes and participation in PA, both in and out of the classroom?
- How would you describe the physical activity culture of the school?

Near the end of the professional development cycle the same teachers were interviewed. These interviews took place after classroom observations, and student interviews. It was intended that a recollection and reflection of the events that occurred as part of the classroom observation would provide the initial stimulus for discussion. However, in the interview it was intended that the following questions be addressed.

- How do you feel about teaching PA/PE?
- How do you distinguish between the two (PA/PE)?
- In what ways did the adviser's work and your experiences in 2006 impact upon your views of PA/PE?
- What are the ways that the adviser has recently worked in your classroom?
- What outcomes did you hope for as a result of working with the adviser/s?
- In what ways did the adviser's work impact upon your classroom practice?
- What sort of evidence is there of change in your classroom practice, for example, work plans, changed assessment practices?
- What sort of evidence is there from lessons, students' work samples, or activities that show the impact of the adviser's work? Could you show me an example?
- Over the past year, how have you collected evidence of student achievement in PA? with a particular
- In what ways have students' reactions to lessons altered since the adviser worked with you?
- What sort of changes have you noticed in your students as a result of the PD you have undertaken?
- How would you describe any shifts in student achievement and attitudes? How have you been able to show evidence of these shifts?

## **Principal Interviews**

These interviews took place during the later stages of the PD intervention. The main focus of these interviews was on developing an understanding of what impacts on the school the principal could identify as a result of the schools involvement in the Physical Activity Initiative PD. The following questions formed the basis of these interviews.

- How did it affect organisational climate or procedures? What changes have been made (allocation of resources, human and physical, policy and programme)?
- Has there been any change in the school's strategic plan as a result of the work done by the advisors during 2006?
- When you wander around the school what sort of things do you want/expect to see happening in relation to curricular and co-curricula PA?
- What evidence is there of how the adviser's work has impacted upon classroom practice?
- What changes have you seen in students' attitudes etc to PA as a result of this PD?
- What evidence is there how the adviser's work has impacted upon the schools physical activity culture?
- What are some of the enablers or constraints on the physical activity culture of the school and wider community?
- How do you feel the PD has affected your teachers' abilities/confidence to deliver curricula and co-curricula physical activity?
- What do you believe the benefits have been of this whole-school development?
- What have been some of the difficulties that a whole school model of PD has presented for you? How were these overcome (if they were)?
- Will you continue to seek professional development that is delivered in this way in the future?
- What are the school's next steps with respect to the physical activity?

## APPENDIX D – RESEARCH OBSERVATION SCHEDULE

Teacher	
School	
Date	
Time	
Number of pupils	
Year group	
<b>Type of activities - what are they doing?</b>	
Inclusive/Engaging; Appropriate to student level; Provide opportunities for learning	
<b>Use of Resources</b>	
<b>Teaching Approach - Interactions between learners and teachers</b>	
<b>Questions for Teacher Interviews</b>	
<b>Student names to interview</b>	<b>Questions to ask them</b>

## APPENDIX E – TEACHER FEEDBACK SHEET (FROM ADVISERS)

Observation Sheet – P.E/P.A Initiative

Context: \_\_\_\_\_

Children were physically Active for: \_\_\_\_\_ mins

Time lesson began: \_\_\_\_\_

Time lesson finished: \_\_\_\_\_

Learning Intention/s: \_\_\_\_\_

Success Criteria: \_\_\_\_\_

Time on Task

12:05  
↓

12:20  
online  
practiced  
P.E

Aspect of Quality Teaching linked to School Vision	Occurrence (tick each time)	Evidence (what you see/hear)
Sharing learning intentions	✓	How we can run as fast as we can.
Discussing Success criteria	✓	hands, our mind, eat the right food. look ahead, don't look back, lots of sleep.
Questioning	✓	asked chn what movements to change to → individuals - why did we need to learn that? - Athletics day.
Questioning linked to learning intention		what were the commands? on your marks, get set. Go.
Small ability groups		
Creating a non threatening and safe environment		
Encouraging team talks		
Providing children with time to practice and apply learning	✓	moving in space - , practiced on your marks, get set go. → running as fast as can - to line & back (once).
Reflection on learning in P.E – discussion/thinking books	✓	thinking book → learnt how to start a race, one thing they learnt → new game.
Allowing students to modify games/activities		
Transference of learning		
Reference to prior knowledge/learning	✓	used chn to demonstrate moves. arms
Feedback, Feed forward		

Reflection/Feedback	Feed forward	This means?
Good Questioning - link to L.I. Thinking books ✓	ability → or pairs to give each other feedback. on success criteria.	

Partner - 1/2 - run to tree other way

**APPENDIX F - DRAFT LONG TERM PLANS**

<b>Physical Education Long Term Plan</b>				
<b>LEVEL 1</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>	<b>Term 4</b>
<b>Key Competencies</b>	<u>Managing Self Relating to Others</u>	<u>Using language and symbols Participating and contributing Thinking Relating to Others</u>		<u>Managing Self Relating to Others Participating and contributing Thinking</u>
<b>Student Needs:</b>	Getting to know each other Learning to work together Water Safety	Be able to play games Play co-operatively with others		Be physically active Be challenged Find out what types of activity they like Safety
<b>Physical Education Lessons</b>  [Skill/attitude development]  <i>Choose at least one specific objective from the strands indicated.</i>	<p><u>Aquatics</u> Confidence Submersion Safe practices Breath control Stroke Development</p> <p>A3 Responsible and safe practices around aquatics B2 Confidence on, in, around and under the water B1 Basic aquatic skills</p> <p><u>CREATIVE PLAY (MIC) (even)</u> <u>PLAYGROUND GAMES (odd)</u> "Getting to Know You"</p> <p>Enhancing a sense of self worth Increase body awareness Building positive relationships</p> <p>C2 Take turns as part of a group C3 Listen to each other D4 Describe how they feel when they are active B2 Develop confidence to try new experiences <b>Games- eg hop-scotch, adventure playground, gutter board, Rals and Rabbits.</b></p>	<p><u>TAG INVASION GAMES</u> "What is a Game?"</p> <p>Co-operative Games <b>Fundamental skills</b> C1 Share equipment and space B2 Take turns as part of a team B1 Move in a game space without contacting others B1 Move in variety of ways and directions successfully D1 Change games to include all players B4 Identify and use rules for safe play</p> <p><u>MOVING IN CONTEXT</u> "How and Where can I Move?"</p> <p>Pathways &amp; Flight (odd) Rotation &amp; Swing, Statics (even) B2 Explore different ways in which their bodies can move B2 Say which activities they enjoy in relation to physical and social well-being A4 Respond spontaneously in their own individual way to a variety of stimuli C2 Move alongside others, sharing space and equipment</p> <p><u>JUMP JAM</u> A2 Take part in regular physical activity <u>SKIPPING</u> C1 Share equipment and take turns B2 Develop confidence to explore different ways of using a rope</p> <p><u>FOLKDANCE / TE REO KORI</u> B1 Develop and perform a sequence of movements D2 Share an event through informal presentation</p>	<p><u>RUN, JUMP, TARGET THROWING</u> All fundamental skills Target games involving a variety of objects</p> <p>B1 Explore space, direction &amp; speed, B1 Jump and land safely A2 Participate in run, jump throw games B1 Aim and throw a variety of objects B3 Talk about what objects were easier to throw and why A3 Responsible and safe practices around throwing</p> <p><u>Aquatics</u> Confidence Submersion Safe practices Breath control Stroke Development</p> <p>A3 Responsible and safe practices around aquatics B2 Confidence on, in, around and under the water B1 Basic aquatic skills</p>	

LEVEL 2	Term 1	Term 2	Term 3	Term 4
Key Competencies	<u>Managing Self</u>	<u>Using language and symbols Participating and contributing Thinking</u>	<u>Using language Participating</u>	
Student Needs	Working co-operatively Understanding the reason for physical activity Regular activity <u>Water safety</u>	Skills and strategies to play a game Practise to improve Know that people have different abilities Working together in, through and about movement. Explore movement activities	Challenge Knowing how to improve Continued physical activity	
Physical Education Lessons	<u>AQUATICS</u> Confidence Submersion Safe practices Water safety Breath control Stroke Development  A3 Responsible and safe practices around aquatics B2 Confidence on, in, around and under the water B1 Basic aquatic skills	<u>TARGET &amp; INVASION GAMES</u> "Let's play a game"  Tag games Fundamental skills Cooperative games Locomotion Activities  C1 Solve problems by negotiation C2 Recognise children's strengths when playing games B3 Move into and share space with others B3 Use hands as a target for receiving a pass while moving B1 & B3 Throw and aim in a specific direction D1 Identify how people can contribute positively to a game	<u>RUN, JUMP, THROW</u> Identify personal strengths and describe ways to improve A4 Demonstrate different techniques for different running distances B1 Demonstrates developing techniques for long jump and high jump. B1 Can throw a variety of objects using slinging, pulling/throwing technique in a side stance B1	
Choose at least one specific objective from the strands indicated.	<u>ADVENTURE BASED LEARNING</u> "Working together" (even year)  Learning about what makes groups and teams work well C1 Understanding that everyone has different abilities C2 Experiencing and describing the benefits of PA A2  <u>PLAYGROUND GAMES</u> "Games to Play" (odd year)  What games can we play and how do we play them in the playground, at home, on holiday B2 How can we change games to make them more fun, more challenging, include more people, less people B2 How can we encourage and help others to join in and play games C1	<u>MOVING IN CONTEXT</u> "Moving Together"  Pathways & Flight (odd) Rotation & Swing, Statics (even) Skills Encouraging others Personal feelings and abilities Movement exploration Folkdance Aerobics Dance / Te Reo  B1 Participate in a range of exploratory movement activities B1 create movement sequences on own or with partner C1 Co operate with others to give and receive feedback A2 Participate in physical activities which enable them to gain confidence	<u>STRIKING AND FIELDING</u> Striking for direction Fielding techniques Returning a ball to a target  B1 Strike a ball at a target B1 Retrieve and return a ball quickly D1 Identify hazards when playing games involving bats C1 Share equipment space and take turns Small sided striking and fielding games Eg. Bat down, zones	

LEVEL 3	Term 1	Term 2	Term 3	Term 4
Key Competencies	<u>Managing Self</u>	<u>Using language and symbols Participating and contributing</u>	<u>Managing Self Relating to Others</u>	
Student Needs	Getting to know each other Learning to work together Aquatic skill development Water safety	Thinking Dealing with competition Giving and receiving feedback Tolerance of difference Positive team work	Planning to reach goals Range of physical activity Adapting to environment, people, equipment Communication	
Physical	<u>STRIKING AND FIELDING</u> <u>Wk 1-3/4</u> Strategies to achieve greater points Team roles Techniques for shot selection Team fielding systems Use contexts such as softball, tee ball, cricket, rounders or games based on these contexts.	<u>INVASION GAMES</u> 2 units with different foci- context large ball kicking/dribbling basketball (even) context large ball passing/dribbling hockey (odd)  Cooperative games Using space well Creating space Defensive and offensive strategies Communicating in a game setting Organising games	<u>RUN, JUMP, THROW</u> <u>Wk 1-4</u> All athletics skills and processes  A4 Set realistic goals and take action towards achieving them B1 Demonstrate effective technique for running different distances, different jump styles, throws and pushes, and slings B3 Describes how the body responds to different types of run, jump and throw. B1 Can peer assess technique	
Education	B1 Strike a ball into space B1 Recognise space B1 Position self in a sensible place to retrieve a ball B4 & C4 develop and follow rules in a game to ensure fair-play C3 Use modified equipment to create a simple striking game.	A3 Identify safety practises during physical activity B4 Describes how competition affects people's behaviour. B4 Practise ways of managing self and others when winning and losing B1 Demonstrate basic attack and defence strategies to gain an advantage in a game C3 Initiate and contribute to positive team talk D1 Identify how games are influenced by community factors eg consumer interests, media messages	<u>ADVENTURE BASED LEARNING</u> <u>Wk 5-10</u> "Great Outdoors" Participate in adventure activities to improve self confidence Increase body awareness Build positive relationships Explore local environments – Woodend Beach, Living Springs Yrs 5/6  Resource: <i>Kiwi Outdoors</i>	
Lessons	<u>AQUATICS</u> <u>Wk 5/6-9</u> Confidence Submersion Safe practices Water safety Breath control Stroke Development Build stamina Skills – rescuing, retrieving objects Competitive aquatics	<u>MOVING IN CONTEXT</u> Pathways & Flight (odd) Rotation, Swing & Statics (even)  Encouraging others Movement exploration Folkdance Te Reo Kori  B1 Learn to refine and adapt movement when creating a group movement sequence B2 Identify and use movement in a similar context B1 Manipulate equipment in ways that enable them to extend their capabilities safely. D2 Participate in an event and describe how such an event benefits themselves and others	C2 Describe similar and different attributes that group members bring to an activity. B1 Participate in adventure activities to improve self confidence. A3 Identify and put into practice ways of ensuring safety of self and others. C1 demonstrate care and concern for the emotional wellbeing of others	
[Skill/attitude development]	A3 Ensure safety of self and others B2 Transfer aquatic knowledge to a range of aquatic situations			
Choose at least one specific objective from the strands indicated.				

LEVEL 4	Term 1	Term 2	Term 3	Term 4
Key Competencies	<u>Managing Self</u>	Cover all units during Terms 2&3 allocating an appropriate amount of time to each.	Managing Self Relating to Others	
Student Needs	Getting to know each other Learning to work together Aquatic skill development Water safety	<u>Using language and symbols</u> <u>Participating and contributing</u> <u>Thinking</u> Dealing with competition Giving and receiving feedback Tolerance of difference Positive team work	Trying new ways of moving Working with others to plan mot Encouraging & supporting others	Planning to reach goals Range of physical activity Adapting to environment, people, equipment Communication
Physical Education	<u>AQUATICS</u> Confidence Safe practices Breath control / Stroke Development Competitive aquatics Emergency practices	<u>INVASION GAMES</u> 2 units with different foci – context large ball kicking / dribbling basketball (even) context large ball passing/ dribbling hockey (odd) Co-operative Games Creating and using Space well Defensive & Offensive strategies Communication in a game setting Organising games	<u>RUN, JUMP, THROW</u> All athletics skills and processes A4 Recognises social images in relation to body image and self-worth. B1 Demonstrate consistent and controlled technique for running, jumping, throwing, pushing. B3 Demonstrate an understanding of the use of specific equipment in a variety of settings. B1 Can use peer assess technique	
Lessons	A3 Safety management B2 Transfer aquatic knowledge to a range of aquatic environments	B4 Describes how competition affects people's behaviour B1 Applies a strategy for a combination of tactics involving defensive and offence play C3 Communicates successfully to implement a strategy A3 Describes and demonstrates safety procedures related to games played	<u>STRIKING AND FIELING</u> Strategies to achieve greater points:- Team roles Techniques for shot selection Team fielding systems Use contexts such as softball, tee ball, cricket, rounders or games based on these contexts.  B1 Strike a ball consistently into selected spaces B1 Consistently position self to retrieve a ball. B4 & C4 develop and follow rules in a game to ensure fairplay C3 Use modified equipment to create a simple striking game.	
[Skill/attitude development]	<u>ADVENTURE BASED LEARNING</u> "Great Outdoors" Participate in adventure activities to improve self confidence. Building positive relationships Explore local environments – Waipara, Wainui	<u>SPORT STUDIES</u> D1 Identify how physical activity events and or trends are influenced by community or societal factors  <u>Endurance</u> Cross country A2 Recognise the importance of regular physical activity	<u>AQUATICS</u> Confidence Safe practices Breath control / Stroke Development Competitive aquatics Emergency practices  A3 Safety management B2 Transfer aquatic knowledge to a range of aquatic environments	
Choose at least one specific objective from the strands indicated.	C2 recognise need for and show support of self and others B1 Participate consistently in adventure activities showing control of movement A3 Use information to action safe choices in a range of contexts  Resource: Kiwi Outdoor Ed.	<u>MOVING IN CONTEXT / Folkdance / Dance:</u> <u>Pathways &amp; Flight (odd)</u> Rotation & Swing, Statics (even)  Encouraging others Personal feelings and abilities Movement exploration  B1 Demonstrate controlled movement when creating a group movement sequence B2 Extend their abilities in a range of movement related activities and accept challenges D2 Participate in an event and describe how such an event benefits themselves and others C1 Identify ways in which personal interactions during physical activity can affect relationships		