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Evaluative research on the impact of effective professional learning in curricular and co-curricular physical activity in primary schools

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June 2007

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Report Commissioned by
Ministry of Education

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EXECUTIVE SUMMARY

This milestone report is the fourth and final for the research project 'Evaluative research on the impact of effective professional learning in curricular and co-curricular physical activity in primary schools.' The research was commissioned by the Ministry of Education and conducted from December 2005 to March 2007.

The broader context of the research was the Physical Activity Initiative, a joint Ministry of Education, Ministry of Health, and Sport and Recreation New Zealand initiative, encompassing the provision for professional development of primary teachers in curricular and co-curricular physical activity. Schools involved in Model 2 of the Physical Activity Initiative, were expected to engage in professional development delivered by School Support Services and Regional Sports Trusts during 2006. The specific purpose of the research was to explore the impacts of professional learning (Model 2), in physical activity, curricular and co-curricular, on primary school teachers, students, and wider school community. In addition, a literature review was developed to explore the national and international literature on physical activity in primary school. Furthermore, gaps in the literature and research evidence were identified, and suggestions were made to enhance the effectiveness of physical activity, curricular and co-curricular in primary school settings.

A national and international literature review was carried out. The literature review was organised into literature related to a number of relevant themes:

- Physical activity in New Zealand primary schools;
- The role and place of physical education in school settings;
- The benefits of having physical activity as part of a school curriculum;
- The enablers and constrainers to physical activity in primary schools;
- The impacts of professional development on physical activity in primary schools; and
- Interventions to enhance physical activity in primary school settings.

The literature review highlighted:

- That professional learning opportunities for teachers need to include: ongoing sessions of learning, collaboration, and application, accompanied by school and

classroom-based support, over a sustained period. For example, physical activity interventions in the USA, and UK, run over an extended period of time, up to three years, with reducing levels of support each year;

- That generalist teachers, in particular, need additional opportunities to enhance their personal understanding of, and proficiency in, physical activities, in order to develop professional confidence and competence in both curricular and co-curricular physical activity settings; and
- The development of school and wider community cultures, and effective partnerships are needed to foster positive attitudes and increased participation in young people.

The literature review revealed a number of gaps in what is known about physical activity, curricular and co-curricular, and which this research might address:

- New Zealand based research on the state and place of physical education in primary schools;
- Research on generalist primary teachers' interpretations, experience and beliefs about physical education and physical activity, both in New Zealand and internationally; and
- Research on professional development of teachers in relation to a physical education curriculum that aims to develop students in a more holistic manner, rather than simply focusing on movement skills.

In addition, ten case studies were carried out in New Zealand primary school, each of these being a study of:

- How physical activity, curricular and co-curricular, was evident and delivered before the introduction of the professional learning opportunities;
- How the professional development was facilitated and delivered; and
- The impacts of the professional learning for teachers, students and the school physical activity culture.

The ten sites were chosen to provide a range of schools, based on decile, geographical location, roll size, ethnic makeup and involvement with School Support Services and Regional Sports Trusts. Four regions were identified from which to draw the sample.

For each case study, data was collected in two phases: pre and post intervention, by means of interviews, observations, questionnaires and document analysis. A researcher made visits to each school and collected data from interviews and questionnaires with teachers, observations of primary classes, interviews with a sample of students, interviews with school Principals, parent questionnaires, and teacher planning records and other documentation. In addition, interviews were conducted with professional development providers from both School Support Services and Regional Sports Trusts in each of the four regions.

Data collected by the researcher was analysed both within and across case studies. The case studies provide snapshot views of each of the ten schools as they participated in Model 2 of the Physical Activity Initiative. The description and analysis of each school includes:

The background of the school and the snapshot context;

- Physical activity practices and programmes in the school before the introduction of professional development;
- Details of the professional development programme for each school; and
- Impacts of the professional learning on teachers, students and the wider school community.

Following the within-case analysis and writing of individual case studies, a cross-case analysis was undertaken. The analysis was grouped and presented according to four central themes: interpretation of policy, deliverers and delivery of professional development, enablers and constrainers within schools, and impacts of the professional learning on teachers, students and the wider school community. The presentation of individual case studies and a cross-case analysis, made it possible to identify what was particular to each case, and what was common across cases. The impacts of the professional development on schools varied. Nevertheless, major findings were drawn from across the case studies, relating to: systemic issues at policy, professional development, and school level, that appear to have influenced the professional development; and the impact of the professional development on teachers, students and school physical activity culture. Major findings highlight that:

- Teachers developed an understanding of how to apply general pedagogical knowledge/practice, such as sharing learning intentions, questioning, and

ability grouping, in their physical education lessons. The adoption of these general pedagogical strategies assisted teachers in structuring the learning process in physical education;

- The development of teachers' general pedagogical knowledge within the physical education lesson, appeared to impact positively on students' attitudes and participation;
- The alignment, and joint approach between School Support Services and Regional Sports Trusts, proposed as a major feature of this of Model 2, was not realised. As a result of the development of school physical activity culture was restricted by limited Regional Sports Trust involvement in Model 2 schools;
- The one-year timeframe restricted the interactions School Support Services advisers had with schools, and the content they were able to deliver. This resulted in a somewhat standardised programme of professional development, as opposed to a programme designed to meet the individual needs of the schools. In addition, the desire to move teachers on within the one-year timeframe, through the provision of unit/lesson plans and activities, appeared to create a level of teacher dependence on advisers to supply learning programmes;
- The knowledge of School Support Services advisers' was limited by their own previous experiences as generalist teachers and lack of professional development for their advisory role before working in schools. This potentially restricted their ability to broaden content to meet individual school needs;
- The focus on general pedagogical knowledge, within the professional development, at the expense of subject-specific pedagogical content knowledge appeared to restrict teachers' opportunities to develop content and curriculum knowledge, which in turn limited the opportunities for students in schools;
- There had been little change in teachers' knowledge, or understanding of how to develop students' movement skills;
- The broad aims, of Model 2, of the Physical Activity Initiative were not realised as planned for at a policy level. Schools and teachers identified a range of strategies and opportunities that would assist them to meet the aims of Model

2, and develop physical activity, curricular and co-curricular. These included: ongoing professional development, access to resources and ideas for use in the classroom; development of a comprehensive school-wide physical education programme, more support for school sport; maintenance and enhancement of physical activity equipment; and better communication with parents.

On the basis of evidence from the case studies and literature review, recommendations for future professional development and learning in physical activity, curricular and co-curricular, in primary school practices were identified for policy, professional development, principals and Boards of Trustees to consider. Finally, recommendations for further research were identified.

Included in the recommendations for policy, professional development, principals and Boards of Trustees to consider are:

- a. That there be greater alignment between Regional Sports Trusts and School Support Services at policy and operational level, when working in educational settings;
- b. That longer-term in-depth professional development is required for the development of teacher knowledge. This is best supported by the allocation of adequate time and appropriate change management strategies;
- c. That the development of teacher knowledge, including pedagogical content subject, content knowledge and curriculum knowledge, is needed in addition to general pedagogical knowledge, in professional development programmes relating to curricular and co-curricular physical activity;
- d. That principals and Boards of Trustees consider the balance of professional learning initiatives, and the impacts of these initiatives on staff. Multiple professional learning opportunities need to be managed so that change becomes sustainable; and
- e. That principals actively engage in providing leadership and support for professional learning, and the change management process, in relation to developing a holistic understanding about the nature of curricular and co-curricular physical activity.

Recommendations for further research include:

- The exploration of alternative models for the facilitation and delivery of physical activity professional development and learning; and a long-term research programme to explore the sustainability of professional learning opportunities focused on curricular and co-curricular physical activity. These would allow for the development of an effective feedback loop to inform Ministry of Education initiatives relating to curricular and co-curricular physical activity in education settings.

ACKNOWLEDGEMENTS

The research team is grateful for the willingness of the case study schools, in particular the principals, liaison person, classroom teachers, parents and students who all contributed to the development of the case studies for this evaluative research.

The research team wish to thank the overview team, of Clive McGee, Ian Culpan, Clive Pope and Lorna Gillespie, for their detailed feedback throughout the research process.

The research team would also like to acknowledge the support from staff in the WMIER, particularly: Anne Harlow and Michael Maguire, for their editing and proofing; Ruth Kapoor for her tireless transcribing, and data entry; Thelma Miller for her work with questionnaire one; Margaret Drummond for formatting, and Clive McGee for his advice and guidance in development of the case studies.

In addition, it is important to acknowledge the support, guidance and direction provided by Carolyn Jones, the WMIER research manager.

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

This is a report on the evaluation undertaken during 2006 and 2007 into the impacts of effective professional learning on curricular and co-curricular physical activity (PA) in primary schools in Aotearoa New Zealand. The findings should provide background information for policymakers, principals, teachers, professional development providers and other stakeholders in education who wish to gain a deeper understanding of effective professional development (PD) and the impacts it can have on schools PA cultures, teacher knowledge understanding and skills in delivering PA learning opportunities, and student achievement.

In December 2004, the Minister of Education, the Hon. Trevor Mallard announced an initiative to encourage primary students to be more physically active. Mallard stated, “The Government is investing in this area because of the concerns about declining PA amongst our kids, and also because research has shown that PA and motor skill development during school time improves students’ health and wellbeing and their academic achievement. ... There is also evidence ... that young people are not picking up the skills and attitudes that will encourage them to be physically active throughout their lives” (The Graham report, 2001, Report on the Sport, Fitness and Leisure Ministerial Taskforce). In light of these concerns changes were made to National Education Goal (NEG) 5 and National Administration Guideline (NAG) 1 (i) (c) to prioritise quality PA that develops students’ movement skills (see *Sharpening the Focus*, Issue 10, August 2005).

To support schools in addressing the changes NEG and NAG, the *Physical Activity Initiative in Primary Schools* (PAI) was launched, to build teacher and school capability in order for students to develop knowledge, skills and attitudes which will motivate them to participate in regular PA over their lifespan. The PAI project aimed:

- To 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 physical education (PE) and PA;
- To strengthen teachers’ pedagogy related to *Health and Physical Education in the New Zealand Curriculum* (HPENZC) (Ministry of Education, 1999), in

order to provide needs-based quality PA experiences that develop movement skills;

- To challenge teachers to think critically about PA experiences for students in their school and to take action where appropriate, in order to enhance the school's PA culture; and
- To work collaboratively with Regional Sports Trusts (RST's) and other agencies to ensure curricular and co-curricular PA needs are met within the school community.

The PAI saw the Ministries of Education, and Health, and Sport and Recreation New Zealand (SPARC) working collaboratively through a tripartite agreement, to build strong, confident learning communities, which embrace a PA culture, with a focus on:

- Effective teaching and learning within the HPENZC; and
- Establishing school/community partnerships which provide regular quality PA experiences.

The PAI involved a comprehensive support package to enable schools to engage in this PA initiative. Facilitation was to be offered by physical education advisers from School Support Services (SSS) and education personnel from RST's. Physical education advisers for SSS would focus on PA as outlined within teaching and learning programmes based on the health and physical education curriculum. Active Schools facilitators (ASF) from RST's would focus on fostering physical activities outside of this time within both the school and the school community. Through regional collaboration of support providers, schools will be offered the opportunity to review, develop and sustain their school's and the school community's PA culture.

Involvement in the PAI was to provide schools with professional development opportunities that allowed teachers and school management to reflect on the PA culture in their school, their physical education programmes and their co-curricular physical activities in relation to the regulation changes. The work with RST was to allow members of school communities the opportunities to foster physical activities beyond the immediate school environment.

The PAI was intended to complement schools' current health and physical education programmes and co-curricular PA through providing additional professional development to schools and teachers. It was designed to enable teachers and schools

to consider evidence of what works to improve competency in movement skills and attitudes to PA, which in turn, could contribute to wellbeing related outcomes. The intent of assisting teachers to provide quality learning in, through and about movement, was that students would choose to be involved in PA practices both now and in the future.

The characteristics of effective professional development were to be used as a basis for the models of professional development available to schools. Model 2, the focus for this evaluative research project, focused on a whole-school, action-reflection professional development model. The intention of this model was to offer action-reflection professional development for schools that needed whole-school focused support. This model ran for the 2006 school year, starting at the beginning of February and finishing at the end of term four.

SCOPE OF THE RESEARCH

The Ministry of Education was seeking evaluative information of the impacts and effectiveness of the whole-school action reflection model. In December 2005, the Ministry of Education contracted the University of Waikato to undertake research, made up of three key components:

Component 1: A review of national and international research literature on PA, curricular and co-curricular, in primary schools settings.

Component 2: Ten case studies of schools involved in Model 2 of the PAI.

Component 3: A cross case analysis and synthesis of components one and two that identify the key practices for PD providers, schools, teachers and students involved developing PA in primary schools.

PURPOSES OF THE RESEARCH

The purpose of this research was to evaluate the impact of professional learning on curricular and co-curricular PA within a whole-school action reflection model, that is Model 2 of the PAI. The focus of this project involved both informing the PD as part of an evidence-based literature review and evaluation of the impact of the professional learning that occurred within and across schools as part of the PAI PD programme that took place across 2006.

The evaluation focused on whether the whole-school action-reflection PD model contributed to positive student outcomes including improved movement skill performance, understanding of

PA, and attitudes or confidence towards and engagement in PA both within and outside of the school day. Beyond assessing the impact of the PD on student outcomes it was important that this evaluation identified the shifts made by teachers, schools and the wider school community that have allowed for positive outcomes for students to be achieved. The evaluation of the success of the whole-school action reflection model is evidenced by: conceptual change in teachers', school leaders' and parents' understandings of PE and PA; change in teacher practices in relation to curricula and co-curricula PA; and a shift in school PA culture.

Within this evaluative report, curricular PA refers to any PA opportunities delivered by teachers during classroom time. This understanding of curricular PA reflects schools' interpretation of curricular PA. Co-curricular PA, for the purpose of this report refers to all PA opportunities occurring out of classroom teaching and learning time. In addition, the terms RST and SSS are used generically to maintain anonymity.

RESEARCH QUESTIONS

To meet the purposes of this research, the following research questions were addressed:

1. What is the impact of professional learning on teachers'
 - a. conceptual change?
 - b. knowledge, understanding and skills in teaching physical education?
 - c. ability and confidence to teach physical education?
 - d. motivation and confidence to offer co-curricular PA opportunities?
 - e. ability to determine students' progress in movement skill development?
2. What is the impact of professional learning on:
 - a. the school PA culture?
 - i. what processes have supported change in the schools PA culture?
 - ii. what school and community factors support a positive PA culture?
 - iii. what strategies are needed to sustain a PA culture over time?
 - b. students' knowledge and attitudes towards PA and their practice within and outside of the school day?

- c. students' movement skill development in extra-curricular activities?
 - d. how physical education teaching contributes to the development of students' movement skills?
 - e. how progress in student achievement is linked to levels of development or achievement objectives?
3. What are the most valuable components of a whole-school action reflection professional model?
- a. What aspects of the PD have shown to be most effective?

TIMEFRAME FOR THE RESEARCH

The research occurred between December 2005 and March 2007.

CHAPTER TWO: METHODOLOGY

This research project used two approaches to evaluate the impacts of professional learning on curricular and co-curricular PA in primary schools:

- A review of national and international literature on physical activity, particularly literature relevant to physical activity interventions in school settings and the impacts of professional learning on teachers, students and schools physical activity; and
- New Zealand case studies of ten schools and their experiences of professional learning as offered in Model 2 of the Physical Activity Initiative; in particular, the impact of the professional learning on curricular and co-curricular physical activity.

THE LITERATURE REVIEW METHODOLOGY

This section describes the methodology used in the literature review, including the development of a review framework, search strategies used to locate national and international literature on professional learning and PA, curricular and co-curricular. The section concludes with some comments on the limitations of the review.

The Project Advisory Group discussed a review framework in January 2006 to assist in planning the review process. This helped to identify the key researchers in the field, suggest strategies for carrying out the search process, and to refine and focus on the areas that would need to be included in the literature search and analysis. This preliminary framework was presented to the Project Advisory Group and the Ministry of Education in an earlier report, for comment and review.

The review framework was developed from the initial RFP and addressed the following areas, that related to the broader objectives of the PAI, and the evaluative research project:

- International charters/guidelines for PA and PE;
- Barriers and Facilitators of PA;
- Programmes and School PA cultures;
- PD and teacher change;
- PA and young people in school settings;

- Teachers and PA/PE in primary school settings;
- National and International Interventions for PA; and
- The identification of gaps in the evidence base.

SEARCH STRATEGIES

An initial search using the information personnel and the extensive existing data bases already held was performed as a scoping exercise to establish the nature and content of the literature. This provided valuable information through identification of key research and collection of recent unpublished material. An important part of the initial search was to make use of the literature already accessed including:

- The Evaluation report of the PA Pilot Project;
- Recently completed research available on the Ministry of Education website; and
- Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis.

As trends and issues become apparent further searches were undertaken as appropriate. A variety of search methods was used in order to uncover different clusters of references, both nationally and internationally. This ensured that the search was both comprehensive and robust. The strategies used to identify material for review included the following:

- Locating Ministry of Education websites to access current information on PA/PE, Ministry policies relating to PA/PE and information relating to Ministry funded PA/PE initiatives;
- Contacting researchers and specialists known to be working in the field of PA/PE in school settings, both from New Zealand and other countries;
- Locating recent national and international PA/PE research literature through library, electronic database, and web-based searching; and
- Thesis searches for unpublished Australasian and British research literature in PA/PE.

ADVICE FROM NATIONAL AND INTERNATIONAL COLLEAGUES

The research team made contact with colleagues from the PE community, and in particular, those known to have an interest in PA/PE in primary school settings. The

purpose and objectives of the review were made known, and a request was made for assistance in identifying key papers, research or researchers working in areas, which fell within the scope of the review. A positive response was received from these colleagues.

Progress on the literature searches, and the subsequent key findings and trends will be communicated with wider research overview team for feedback and further suggestions of areas of importance to be investigated.

LIBRARY AND DATABASE SEARCHING

Working alongside the Head Librarian at Waikato Education Library, electronic searches were made using the library databases ERIC, Catchwood, Proquest, Index New Zealand (Te Puna), and Google, using key words identified in the preliminary planning session (see Tables 1 and 2). Lists of all records retrieved from these searches were printed out and examined by the research team. Materials deemed to be relevant were recorded on Endnote, together with abstracts wherever possible.

The key words and structures were communicated to information professionals/research assistants for literature searching using the multi-dimensional search engines. Input on identification of keywords was gained from the research overview team, and refined across the course of the search.

Key words used within the search included:

- Youth, children and PA;
- PE;
- Teacher qualities;
- Effective professional development;
- Curricula, co-curricula and extra curricula;
- Whole school professional development models;
- School-community planning;
- PA cultures;
- Resources;
- Movement skill development;
- Learning outcomes;

- Improvement in learning outcomes
- Teachers and education and PA;
- Students and education outside the classroom;
- Teachers' views about PA/PE;
- Students' views about PA/PE; and
- Learning outcomes gains.

Following the search protocol used by Carr, McGee, Jones, McKinley, Bell, Barr, and Simpson (2000), physical searches were made of journals which were considered to be important in the areas of physical activity, physical education, PD and teacher change. This search was to find articles that could have been missed by using electronic key word searches alone. A refinement of the review was established at this point after analysing the identified abstracts.

Table 1 Electronic database searches

Electronic databases searched	
School of Education Library Catalogue	EBSCO
University of Waikato Library catalogue	AEI: Australian education index
NZ Bibliographic database	Education Research Theses: Database of Australian these
ERIC: U.S Education database	Kinetica: Books held by Australian libraries
Proquest	Google
Catchword	Google Scholar
Index New Zealand/Te Puna:\	JSTOR
Books held by New Zealand libraries	Physical Education Index
SPORTDiscus	
Professional Development Collection	

Table 2 Internet Searches

Websites used to gather material
http://www.ed.gov/pubs/Museum/title.html
http://www.edgazette.govt.nz
http://search.netscape.com/google.tmpl?cp=srpwidsrc&search=www.tki.org.nz
http://www.google.co.nz/
http://www.ero.govt.nz/
http://www.ed.gov/pubs/Museum/title.html
http://www.dfes.govt.uk

<http://www.minedu.govt.nz/>

<http://www.curricstudies.educ.ubc.ca/faculty/AndersonD.html>

An extensive range of international literature was located and this provides the basis for the following literature review. The seemingly relevant publications were selected for further study, and were further shifted so that only material pertaining to the research questions was retained.

The criteria used to select articles, books and reports for reviewing and summarising will be:

- The presence of material addressing the links and relationships in relation to a preliminary framework;
- Major review articles;
- Meta-analyses of case studies; and
- Articles by key researchers.

The searching was comprehensive. Important features of the search process included use of keywords developed from a preliminary framework to search electronic sources, following up key references suggested by the project team and national and international team members, snowballing from these references, and physical searches of key publications. The value of using a variety of search methods is that each method uncovers new and important references. An internal check occurred to ensure the same references had been located by several approaches.

The following measures were used to strengthen the validity of the literature review, and the analysis and synthesis of information about New Zealand and international practices in school based PA:

- Regularly circulating review updates with the advisory team;
- Using a variety of search methods to locate New Zealand and international literature; and
- Peer review of the draft review document.

SELECTION CRITERIA

The review was structured on the basis of the major research questions listed in Chapter 1. The search was in both New Zealand and international literature. Literature that was located was scrutinised, then either accepted for further analysis or rejected as not relevant to the focus of the review (there were many papers, etc. in this category). Criteria used in this final selection were:

- Relevance (a paper etc. had to relate to the research questions); and
- Methods (either reporting a research study or synthesizing the findings from other studies).

In terms of the type of literature sought, attention was focused upon major review articles, meta-analyses, and articles by key researchers, and reports of research findings. The research methods employed by researchers engaged in reporting investigations were also a central concern, including qualitative and quantitative methods, sample sizes and types, and measures used to assess the impacts of learning experiences.

Characteristics and limitations of the literature

Within a New Zealand context there has been very little research completed that focuses on PE, and less specifically looking at PE /PA in the primary school setting. This means that the majority of literature selected for this report is drawn from work done in overseas contexts. In addition to this, most literature on school-based PA focuses on specialist teachers working in secondary schools. Only within the USA, where specialists teach PE in the elementary school, is there a vast literature base on teachers work at the primary school level. Consequently, there is limited literature available on generalist primary teachers delivering PA/PE. Therefore when reading/interpreting the research coming from the USA it is important to note that they are referring to a specialist teachers of PE, who are not responsible for teaching across all curriculum areas, and have been trained specifically to teach PE. These teachers therefore have differing PD needs and outcomes from PD than the generalist teachers that we have in New Zealand primary schools.

With a world-wide focus on young people's health there is a growing body of research in PA in school settings, however most of the research available frames PA/PE in relation to physical health outcomes and motor skill development. While helpful to our

understanding of human movement, this research does not provide insight into the broader benefits gained from being physically active, that are recognised and valued with the New Zealand HPENZC.

Lastly, the literature review highlights a range of interventions presently being delivered internationally, that focus on teacher development and delivery of PA/PE. It was not within the scope of this literature review to examine all PA interventions occurring in primary schools settings, therefore the review details a sample of interventions that either, are internationally recognised or are focused on the PD of generalist teachers.

THE CASE STUDY METHODOLOGY

School-based case studies provided the project team with the opportunity to examine the impact of whole-school professional development on curricula and co-curricula PA through a contextualised yet interconnected approach. This allowed for a depth of evaluation, both at local and national levels, while maintaining a focus on the importance of the school context. The case study approach allowed for the evaluation of a bounded system including:

- Observation of effects in real contexts;
- Reporting on complex and dynamic systems;
- Chronological narrative;
- Description of people, practices and programmes – with analysis of them;
- Highlighting of particular events; and
- Portrayal of the richness of the system/context.

The research process involved identifying schools in three regions through out Aotearoa New Zealand and gaining ethical consent. One researcher then undertook the research, using a case study approach, during two periods in 2006. Analysis and write-up of the case studies occurred in December 2005 and January/February of 2006 (see Table 3).

TIMELINE

Table 3 Timeline For The Case Studies

Tasks	Date	Description
Ethical consent	Prior to data collection (in two phases)	Phase One – early 2006, principals, teachers, PD providers were informed about the goals of the study, what their involvement would mean, and their informed consent gained. Phase 2 – beginning term 4. Parent and students information about student involvement, and informed consent gained.
Pre-intervention data collection	Late Mar– Early May 06	Selected teachers interviewed and all teaching staff asked to complete a questionnaire
PD provider interviews	Mar-Jun 06	Focus group interviews with PD providers from SSS and RST
Near post-intervention data collection	Oct-Nov 06	Lessons observed, field notes taken, teacher, Principal, student interviews occurred, parent and 2 nd teacher questionnaire completed, PE programmes and documents gathered.
Case studies developed	Dec-Feb 06	Analysis and writing up of case studies undertaken.

SELECTION OF SCHOOLS

The sample size of ten schools, determined after negotiation with the Ministry of Education, drawn from four regions. The ten case studies provide a reasonable representation of schools involved in Model Two of the PAI, reflecting a range in decile, school size, urban-rural location, ethnic diversity and support being offered by Regional Sport Trusts, with due regard given to accessibility by the research team. Lists provided, at the beginning of March, outlined all schools SSS Advisers were working in for Model 2.

Records from RST's detailing the schools they were targeting to work with during 2006, were gathered at the beginning of March. Lists from the greater two RST's indicated some planned involvement with Model 2 schools. In the other region involved in case study schools, the RST understood that they were not to work specifically with Model 2 schools, however were offering all schools in their region access to the Active Schools Toolkit training, and had some Model 2 schools involved in a School

Community Partnership project that they were trialling. A hold-up in being able to access confirmed lists from SSS and RST's delayed determining the sample, contacting schools about involvement, and therefore accessing schools prior to the delivery of introductory cluster workshops or in-school staff meetings.

Having accessed the data from the PD providers, the researcher worked with members of the research overview team and the research director to identify ten schools, in accordance with the areas identified in negotiations with the Ministry of Education (MoE) and SPARC. In addition, the sampling process addressed the need to have a spread in decile, ethnic make up, roll size, and school type. Multiply iterations of the sample were worked through to determine ten schools that best reflected the wide variety of schools in New Zealand. In addition, the project team identified back-up schools to be contacted if any of the first ten declined to participate.

In the middle of March the researcher contacted the ten schools identified from the sampling process and invited them to participate in the evaluative research, after providing information about what participation would entail. Eight of the ten schools agreed to participate, however two schools declined, highlighting that the expectations on them to participate in both PD and research were placing increasing demands on the staff and classes in their schools. Contact was made with a further two schools, that maintained breadth in the sample, who agreed to participate. Table 4 shows the schools according to decile, roll (totals have been rounded to the nearest 20), teacher numbers and school type. Pseudonyms were used to protect the identity of the schools.

Table 4 Case study schools

Pseudonym	Decile	Approx. Roll	Teaching staff	Ethnicities	School type
Plains School	8	100	5	Pakeha 89%, Māori 5%, South African 6%	Contributing rural
Mud River	5	600	25	Pakeha 88%; Māori 10%; Others 2%	Full Primary urban
Steephill School	7	90	5	Pakeha 77%, Māori 20%, Tahitian 3%	Full Primary urban
Westfield School	7	250	11	Pakeha 45%, Māori 14%, Asian 22%, African 5%, European 5%, Middle Eastern 3%, Samoan 3%, Tongan 2%, Cook Island 1%	Contributing urban
Meteorite School	10	20	2	Pakeha 71%, Māori 29%	Full Primary rural
Stadium School	6	400	15	Pakeha 69%, Māori 15%, Asian 8%, Filipino 4%, Pacific 4%	Full Primary urban
Waterfall School	3	100	5	Maori 99%, Pakeha 1%	Full Primary rural
Bush School	1	160	6	Māori 95%, Samoan 1%, Tongan 1%, Middle Eastern 1%, Other 2%	Full Primary urban
Airport School	1	500	22	Māori 24%, Samoan 29%, Tongan 17%, Cook Island 22%, Niuean 6%, Pakeha 1%, Others 1%	Contributing urban
Otter School	10	120	8	Pakeha 91%, Māori 6%, Samoan 2%, Other 1%	Contributing urban

Once contact with the schools and been made, informed consent for school participation was gained from Principal, and visits were arranged on a timetable that was consistent with the other aspects of the research. Informed consent from teachers was collected at the time of the

first questionnaire, and parent consent for students involved as gathered with the returned parent questionnaires, prior to student involvement.

The case study process

In this study, the researcher used multiple perspectives and multiple sources of data to explore the impacts of the PD from the perspectives and experiences of teachers, school leaders, students, parents and PD providers, including: interviews, lesson observations, questionnaires and document analysis.

Data collection for each case study occurred during two collection phases, firstly during the latter part of term 1 or early in term 2 prior to extensive involvement in the PD, and then again early in Term 4 2006, nearing the end of each schools involvement in the PAI. The same researcher visited each school for one day during term 1 or early in term 2, and then visited again early in term 4 for 1-2 days.

Initially teacher questionnaires were to be sent, collected and used to identify potential teachers to follow as part of the case study process before the first visit. However due to delays in accessing information about schools involved in Model 2, and a desire by the researcher to visit schools before they had been involved extensively in the PD, questionnaires were sent before the first visit, and collected during the first visit. While collection of questionnaires during the first visit appears to have increased response rate, it also created an issue of how to identify teachers to participate in interviews and classroom observations. It was decided that principals, or an appointee of their choice, would approach teachers to be involved prior to the first visit, and allow them time to read information about participation and consent to be involved. Principals were provided with an outline for selection of teachers, of which one would be a lead teacher, that detailed the researcher's desire to explore the impacts of the PD on teachers at varying levels of confidence, and expertise when delivering PA opportunities. In most instances, principals identified someone they perceived as an expert, intermediate, and beginner when delivering PA, also in some instances principals identified each of these individuals from across their syndicate groups. However, principals in smaller schools in consultation with the researcher determined it more suitable to interview and observe fewer teachers, while in some larger schools it was deemed appropriate that more teachers be involved. Having identified and gained consent from teachers to be involved, teacher interviews in each school and the collection of teacher questionnaires occurred during the researcher's first visit.

Contact made at the beginning of term three, allowed the researcher to book two days in each school during a time period running from week 2 and week 6, in term 4, for the post intervention data collection. The decision to book time in schools early, was important, as schools reported that term 4 would be very busy, and that they would struggle to accommodate additional activities, such as a visiting researcher. However, thorough planning, and the two days in every school was disrupted as union meetings resulted in the researcher only being able to spend a day and a half in some schools. During the second phase of data collection, the teachers interviewed during the first visit were re-interviewed, with the exception of two teachers who were unavailable due to illness. In addition, observation of interviewed teachers' PE lessons occurred, field notes were gathered and a focus group with three to six of students from the observed classes occurred. Observations did not occur at Mud River, or with one teacher at Bush School, due to wet weather and the lack of access to large indoor space. Interviews with principals provided a senior management view of the impacts of the PD, and highlighted broader school issues that supported and inhibited the PD. All staff were asked to complete a second questionnaire, sent prior to the researcher's visit, which was collected at the time of the visit. The response rate to this questionnaire was much lower than the initial questionnaire, with many teachers commenting that they had too much to do to be completing questionnaires. Finally, parents of students, from interviewed teachers' classes, received a questionnaire and were asked to comment on their perspective of the school PA culture, opportunities students had to be physically active and impacts of the PD on student learning. Across all sites relevant documentation was gathered, for example, samples of teacher planning and assessment, summaries of teacher-class discussions, samples of school-wide plans, feedback forms from adviser visits and where available, school publicity material.

The ten case studies are described in Chapter Four. It should be noted that the research team used a proforma, to achieve consistency in data collection and reporting of all case studies. However, because of the idiosyncratic nature of each case, some variations had to be made within particular cases. For example, it was not always possible to complete lesson observations due to weather conditions and unavailability of a large indoor space. In addition, there were variations in the sites themselves.

INTERVIEWS

Interviews with teachers, principals, students and PD providers form the basis for the case studies. With all groups, semi-structured interviews were undertaken. Themes were decided upon before interviewing but other topics, themes and aspects were discussed where necessary. In this manner the interviewer could be responsive to interviewee comments. Interviewees were also encouraged to discuss any ideas not covered by the interview schedule. The student questions were altered depending on student age and maturity. All students were interviewed in groups and selected at random by the researcher, from the list of students whose parents had consented for them to be involved. Teachers had no direct input into who was chosen, much to some teachers' disappointment.

A meeting room in the each school was used for most teachers, and the Principals' interviews. When it was not possible for teachers to be released from their classroom, interviews were conducted in the classroom while students worked on quietly. The student interview site was dependent on the teacher and where he/she thought them best to be undertaken. The PD providers' interviews occurred at the offices of SSS and the RST in each region.

The following summaries provide an overview of the themes addressed in the teacher, student and provider interviews. In the case of the teachers and students there are before and after schedules.

Teacher Interview One

- Involvement so far in professional development;
- Understanding of PA/PE;
- PA (curricula/co-curricula) programme in the school currently;
- Own experiences and delivery of PA (curricula/co-curricula);
- Student participation, motivation, attitude and movement skill level; and
- PA culture.

Teacher Interview Two

- Reflection on lesson observation;
- Experience of PD this year;

- Changes in the school relating to PA;
- Changes to their own delivery of PA (curricula/co-curricula);
- Changes to student participation, motivation, attitude and movement skill level; and
- Further support needed.

Student Interview

- Reflection on lesson observation;
- Learning in PE/PA in 2006;
- Teacher attitude, delivery of curricular PA, and involvement in co-curricular PA; and
- Frequency/quality of PA opportunities (curricular and co-curricular).

Principal Interview

- Changes for teacher and students;
- Changes to school policy, programmes, practices; and
- PD delivery, content.

QUESTIONNAIRES

In constructing the teacher questionnaires, there were several key considerations.

- 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.
- There needed to be questions that were quantifiable and would provide 'broad-sweep' information, and questions that gave teachers the chance to elaborate their views and ideas.
- The time to do a questionnaire should not normally exceed 20 minutes, thus the researchers needed to be highly selective about which questions would be included. The '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 first questionnaire taking most teachers longer

than 20 minutes to complete. While this caused some concern for the researchers, teachers diligently completed all questions. The second questionnaire was much briefer, however neglecting to include demographic data questions was a limitation of the questionnaire.

In constructing the parent questionnaires, there had to be additional considerations.

- While still needing to provide questions that were both quantifiable and would provide 'broad-sweep' information, it was essential that the questionnaire was no longer than two pages.
- With the diverse locations of the case study sites, it was important that the language used within the questions was accessible to all parents.
- These considerations required that the questions were specific and well worded, in order to gain the best possible data from a short questionnaire.

The piloting of all questionnaires, using parent groups and primary teachers, assisted in the development. Feedback on the questionnaires from the research overview group also proved essential in their improvement. Questionnaires can be viewed in Appendix One.

Response rates and data analysis

From the ten case study schools, out of a total possible number of 104 teachers, 75 (72%) completed the first questionnaire. Given the length of this questionnaire, this was a very high response rate. However, for the second questionnaire the teacher response rate of 55%, was lower, with teachers commenting that they did not have time to complete it amongst all the other pressures of term 4.

In each of the case study schools, the parents of students in the classes of the two, three or four teachers interviewed were surveyed. In total, parents of 27 classes of students were sent surveys. All parents in the case study schools were not surveyed as this was unmanageable and would have put a larger burden on both teachers and data entry. It was decided that a sample of parents would provide a representational picture of parent views. The response rate to the parent survey varied, however, in total 297 parents returned surveys. The response rates were: Plains School – 75%, Steephill School – 78%, Mud River School – 20%, Westfield School – 35%, Meteorite School – 68%, Stadium School – 67%, Waterfall School – 55%, Bush School – 32%, Airport School – 69%, Otter School – 57%. These surveys were collected during the

second round of data collection and also included parental consent forms for student participation in observations and interviews.

For all questionnaires, responses have been inputted into SPSS using well-established data techniques. Quantitative and qualitative data are described and reported within each case study, and used with the synthesis to explore cross-case themes.

OBSERVATIONS

On the second visit to each school, the researcher scheduled an observation with each of the interviewed teachers. The observation focused on the teacher delivering a PA opportunity, be it a PE lesson, or some other PA opportunity that they delivered during classroom time. The purpose of the observation was to provide a small insight into the teacher's understanding, confidence, and ability to deliver PA. One lesson observation could not assist in the exploration of the development of ideas and changes in programmes and practices. However, in conjunction with interviews, they assist in developing an understanding of change in practice and understanding. The observations occurred before the second teacher interview, and the student interviews, consequently allowing the researcher to reflect on the lessons, with the teacher and students, in the interviews. The observation schedule used assisted the researcher in detailing practice as it related to the research questions, it included:

- Type of activities – what are they doing?
- Inclusive/engaging; appropriate to student level; provide opportunities for learning;
- Use of resources; and
- Teaching approach – interactions between learners and teachers.

ANALYSIS

The evaluative research report provides snapshot views of each of these schools as they participated in Model 2 of the PAI. The description and analysis of each school related to the PAI includes:

- The background of the school and the snapshot context;
- PA practices and programmes in the school before the PD;
- Details of the specifics of the PD programme for each school; and

- Impacts of the PD on teachers, students and the wider school community.

Following the within-case analysis and writing of individual case studies, cross-case analysis was undertaken. The cross-case analysis provided a means to gather evidence together, and to make comparisons of how the PD was delivered and the impacts of the PD across the cases. Synthesis in the cross-case analysis involved investigating the commonalities and differences from the individual cases, and highlighting emerging issues of relevance to the research questions. Attempts were made to build a credible explanation, and to create abstractions from a study of all the cases.

The findings are grouped and presented according to the four central themes: interpretation of policy, deliverers and delivery of PD, enablers and constrainers within schools, and impacts of the PD on teachers, students and the wider school community. Together, the findings respond to the original research questions.

LIMITATIONS OF THE CASE STUDY PROCESS

There are limitations in answering the research questions from case study data including:

- Timeframes determining when the researcher could access schools, created two issues. Firstly, the first round of data collection occurred after staff, in most schools, had been involved in staff meetings, and some schools had been to at least the introductory workshop at the end of 2005. Data gathered at this time did not necessarily provide an accurate indication of teachers starting points, as they had already been influenced by the PD they had received. Secondly, in order to get access to schools in term four, and collect the data for analysis in time for the due date of the final report, the second round of data collection had to occur early in term four. At this point, the PD had not finished, and schools still had at least one visit by the adviser to complete. The data gathered therefore provides a snapshot of the impacts of the PD to that point. It does not detail the long-term impacts or highlight the sustainability of these impacts after PD external support was withdrawn;
- Data collection in term four was difficult due to the pressures on schools during this time, including productions, camps, union meetings and Education Review Office visits. Schools had limited time available to have a researcher in

their school. This in conjunction with the expense of travelling to different areas, made return visits to collect additional data, such as missed lesson observations, or staff illness, difficult.

- The difficulty of gathering data about student achievement. It should be noted that in assessing student achievement in PE, teachers tend to use tests to measure students' movement skills, however often in other aspects of learning, such as cooperative skills, they use subjective judgements that are not recorded. Therefore, in order to develop an understanding of student achievement in PA, this research has used teachers' subjective accounts, and student self-reporting within the development of the case studies.
- From the parent responses to questionnaires, there was limited evidence to demonstrate a change in parent awareness of practices associated with PA in the school community. This may have been due to Model 2 not being delivered in the broad manner that was originally intended. As a result, there is little parent voice evident in the cross-case analysis.

LIMITS OF EVALUATIVE RESEARCH PROCESS

The evaluative research process has been useful in highlighting the impacts of Model 2 of the PAI, and informing the PD programme. However, the evaluative research process could be enhanced by:

- Researchers having access to schools before PD intervention, in order to gather baseline data. This way, PD providers in the development of their content and delivery could use baseline data to make informed decisions; and
- Extending the timeframe of the evaluative research, so that researchers were able to collect data after PD support has been withdrawn. This would allow the evaluative research to explore, and report on the sustainability of change resulting from PD.

CHAPTER THREE: LITERATURE REVIEW

Chapter 2 outlined the methods used to carry out the literature search, and the framework used for reviewing and reporting relevant literature. This chapter reports the findings from a review of national and international literature on PA in primary/elementary school settings. This literature review outlines what is known about PE in New Zealand primary school and then goes on to explore the: role and place of PA, benefits of PA/PE, barriers and facilitators to quality PA/PE, impacts of PD on teaching PA/PE, PA/PE interventions, and gaps in the literature, relevant to education settings, particular primary schools.

PHYSICAL EDUCATION IN NEW ZEALAND PRIMARY SCHOOLS

While PA has been part of the primary school curriculum in New Zealand since the release of the 1877 Education Act (Stothart, 2000) there has been limited research into what PA is occurring primary school settings. Anecdotal evidence suggests that PA in primary school settings in New Zealand occurs in both curricula and co-curricula settings. Some opportunities for children to participate in PA in school settings include: PE, spontaneous play, outdoor education, structured play, dance, drama, structured sport, un-structured sport, deliberate exercise (fitness), and active transport.

In 2001, the first year of compulsory implementation of the HPENZC, the Education Review Office completed a review of physical activity in primary schools (n=100). Part of the focus for the review was on physical education. They concluded, “decisions about frequency and duration of lessons for physical education and fitness were often made by individual teachers without direction from school policy... As a consequence, the regularity and quality of physical education lessons and sport in some schools is dependent on the interests and enthusiasm of individual teachers” (Education Review Office, 2001, p. 7 of 8).

Further, in 2004 the Ministry of Education completed the *Curriculum Stocktake: National School Sampling Study: Teachers experiences of implementing Health and Physical Education in the New Zealand Curriculum*. This provided a quantitative perspective based on self-reporting, of what has changed in primary school physical education since the HPENZC became mandated. The research on curriculum implementation (Ministry of Education, 2004) suggested that teachers felt that they

had found “professional development had given them greater depth of knowledge [about the curriculum] and they had been able to take away ideas about how to plan and implement the curriculum” (Ministry of Education, 2004, p 265). However, this research does not provide detail about the practices of physical education at the micro level for teachers and students.

With the exception of 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 HPENZC. Central to his research was the notion that national curriculums 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. While this is edifying it provides little in the way of understanding what philosophical shifts generalist teachers have made in response to the HPENZC, or the beliefs these teachers hold in relation to physical education. While some would suggest that a working knowledge of the document would suffice and allow the teachers to implement HPENZC, others would argue that in order to achieve the intent of the statement teachers would need to understand the philosophical shift that underpins it (Stirling & Belk, 2002; Tinning, 2000).

More recently, 2005, a summary of an evaluation of the Primary School PA Pilot Project was released. An initiative implemented jointly by the Ministry of Education (through School Support Services) and SPARC (through Regional Sports Trusts) between October 2002 and December 2004, the pilot project consisted of 15 primary schools in four clusters: Counties-Manukau, North Harbour and two in Christchurch. The project comprised three features: professional development provided by SSS; PA coordinators, one per cluster, approximately three to four schools per coordinator; and an evaluation component. The Project aimed to improve:

- The quality of PE programmes for primary school children;
- The quality and number of PA opportunities for these children; and
- The children’s levels of PA.

Key findings of the evaluation included:

- Lead teachers, physical activity coordinators and supportive principals were key factors in the successful roll-out of the pilot to the whole school;
- The quality and quantity of physical education teaching improved in the schools, as lead teachers and then other teachers changed the way they taught the health and physical education curriculum, and programmes changed from a sports-based focus to one that was more inclusive of all children;
- The professional development component was a key factor in bringing about the changes in teaching of the health and physical education curriculum;
- Schools perceived an increase in children's participation in physical activity but heart rate monitoring data did not show higher intensity activity levels; and
- Post-intervention testing of fundamental motor skills showed an improvement in children's skills.

(Ministry of Education, 2006)

The evaluation of the Primary School PA Pilot outlined the success of the PD, and the joint approach offered by curricular and co-curricular advisers. It is worth noting that the ratio of advisers to schools is substantially lower than that experienced with the Model 2 initiative being evaluated within this report, and the pilot also ran over a longer period of time.

THE ROLE AND PLACE OF PHYSICAL ACTIVITY IN SCHOOL SETTINGS

Two internationally recognised documents provide relevant guidance about PA curricular and co-curricular for New Zealand school settings, the *International Charter of Physical Education and Sport* (ICPES) (UNESCO, 1978) and World Health Organisations (WHO) guidelines for *Promoting active living through and in schools* (2000).

The ICPES outlined a series of articles for consideration in the development of PE and sport programmes, in schools and the wider community. Published in New Zealand in 2002 as part of the *Olympism in Life* series (NZOC, 2002) the ICPES, provided support for the place of PE with the school curriculum, and aligned with the philosophical intent of the HPENZC. Of particular relevance to schools settings, Articles 1 – 7, emphasised the significance of PE and sport in school settings and

outlined some expectations about the requirements needed for the delivery of quality PE and sport, including:

- The practice of physical education and sport as a fundamental right for all;
- Physical education and sport form an essential element of lifelong education in the overall education system;
- Physical education and sport programmes must meet individual and social needs;
- Teaching, coaching and administration of physical education and sport should be performed by qualified personnel;
- Adequate facilities and equipment are essential to physical education and sport; and
- Protection of the ethical and moral values of physical education and sport must be a constant concern for all.

The ICPEs reminds schools and teachers of the importance of PA, in the forms of PE and sport, and details the need for qualified teachers/coaches, access to adequate facilities and equipment, and the need to design programmes that meet student needs, including development of the physical, social, and moral aspects.

In contrast the WHO guidelines focus explicitly on the physical health benefits, as the WHO attempts to encourage countries, both developed and developing countries, to address concern about a decrease in PA and formal PE programmes in schools. The WHO guidelines for “Promoting active living through and in schools” state that schools can and should:

- Allow each child and young person to take part in a structured PE curriculum and in PA sessions of moderate to vigorous levels regularly, several times each week; and
- Offer a range of physical activities outside the school system, i.e., in the community with the support of parents, peers, community leaders and local sports and social organisations (p.11).

The WHO guidelines focus predominantly on the physical benefits of PA, and therefore do not reflect the holistic view of wellbeing embedded in the New Zealand HPENZC. However, when viewed in conjunction with the ICPEs, these two documents

(policies/charters) provide a valuable reminder for policy makers, teacher educators, schools and teachers about importance of PA/PE within school contexts.

PHYSICAL ACTIVITY IN SCHOOLS – THE BENEFITS AND OUTCOMES

PA, curricular and co-curricular, has the potential to make considerable contribution to the development of children and young people in New Zealand. PA, delivered in curricular and co-curricular settings can:

- Help children to develop movement skills and interest in physical activity;
- Enhance social and cognitive development and academic achievement;
- Positively enhances self confidence, self esteem and reduces tendency to risk behaviours;
- Prepare children to embrace cooperation, competition, winning and losing;
- Make unique contributions to developing social skills, moral and aesthetic development;
- Develop an understanding of the role of physical activity in promoting health;
- Assist students to become critical consumers of PA;
- Encourage students to take responsibility for their own wellbeing, and the of others and the wider community;
- Relieve tension, by acting as a form of relaxation;
- Contribute to integrated development of mind and body; and
- Help with maintenance and enhancement of an individual's physical health, for example, by building and maintain healthy bones, muscles, and joints; controlling weight, build lean muscle, and reduce fat; and preventing or delaying the development of high blood pressure.
- (Almond, 1997; Arnold, 1979; Bailey, 2006; Seefeldt & Vogel, 1986; Sidentop, Mand, & Taggart, 1986)

While qualitative research often uncovers strongly held negative views about PE, and shows how badly delivered PE can put someone off PA for life, there is evidence that properly designed and delivered PE programmes can enhance young people's enjoyment of, and participation in, PE, and possibly increase leisure time participation in PA (Hickson & Fishburne, 2004).

A number of studies have found that physical education programmes can enhance positive attitudes toward exercise by encouraging students at all skill levels to participate (Ferguson, Yesalis, Pomerhn, & Kirkpatrick, 1989; Jess, 2002; McKenzie, Sallis, Faucette, Roby, & Kolody, 1993; McKenzie, Sallis, Kolody & Faucette, 1997). One project surveyed 603 students, 261 females and 342 males, in classes equivalent to New Zealand Year 7 – 9 (nearly all the students were white, and 28% lived on farms in Iowa) and concluded that early development of positive attitudes toward exercise can play an important role in an individual's inclination to maintain an active lifestyle (Ferguson et al., 1989).

Sleap, Warburton and Waring (2000) argue that primary schools can play a vital part by valuing the notion of an active lifestyle and developing a school ethos where PA is accepted as an enjoyable and all-embracing feature of daily life. They point out that, as almost a quarter of a primary school child's day can be spent in break and lunchtime, the potential for engaging in PA is therefore high, provided adequate equipment is provided for students can use to engage in physical activities (Verstraete, Cardon, De Clercq, & Bourdeaudhuij, 2006). Kahn, Ramsey, Brownson, Heath, & Howze, et al., (2002) believe that PE needs to be enhanced, both in terms of quantity of time devoted to it during the school day, and in terms of the quality of provision. After reviewing the literature, Trudeau and Shephard (2005) found grounds for suggesting that a sufficient amount of a quality PE programme can contribute significantly to the overall amount of moderate-to-intense PA of the school-age child, and help to maintain initial positive perceptions.

Evaluations of programmes designed to increase physical activity levels in schools indicate that creating more opportunities, greater variety and more accessible physical activities can lead to significant increases of between 4.5 and 7.5 hours a week in the time spent in physical activities (Lowden, 2003). However, physical education programmes within the school day are considered insufficient, by themselves, to address concerns about pupils' health and activity levels. According to Jess (2002), the challenge is to develop programmes that not only maximise children's opportunities within school physical education but also promote sport, dance and outdoor education opportunities beyond the school day. Some researchers have pointed to the benefits of adopting an interdisciplinary approach to physical education, particularly through the integration of the academic concepts that are associated with the discipline into the active components of the class (Grube & Beaudet, 2005). Others

advocate a more comprehensive approach in which physical activity promotion operates consistently across the curriculum and the wider school community, that is, in a whole school approach (Cale & Harris, 2005) and a positive physical activity culture within the school community.

FACILITATORS AND BARRIERS TO PHYSICAL ACTIVITY IN PRIMARY SCHOOLS

While the literature details the potential benefits of PA and particularly PE in school settings, further evidence suggests that these benefits will not occur automatically. Simply having PE curriculum time allocated, and providing other opportunities for students to be physically active, does not necessarily bring about positive changes for students and their communities. Kahn et al., (2002) highlight that inadequate time in the curriculum and lack of resources for adequate teaching of PE mean that many schools around the world do not meet the four basic goals of PE in schools contained in the WHO (2000, p. 10) guidelines:

- To lay the foundations for lifelong active living;
- To develop and enhance the health and well-being of the students;
- To offer enjoyment, fun and social interaction; and
- To help to prevent/reduce future health problems.

Furthermore, Bailey (2006) suggests that

... the actions and interactions of teachers and coaches largely determine whether or not children and young people experience these positive aspects of [Physical Education and Sport] PES and whether or not they realize its great potential. Contexts that emphasize positive PES experiences, characterized by enjoyment, diversity, and the engagement of all, and that are managed by committed and trained teachers and coaches, and supportive and informed parents, are fundamental.

School cultures, teachers and students all have a role in the success or failure of PA in school settings, as detailed in the literature outline in the following sections.

THE ROLE OF TEACHERS

As outlined by Bailey (2006) teachers place a pivotal role in ensure that students have positive experiences of PA in school settings. Research indicates that teachers who feel good about themselves, and are competent and confident in what they do, are

more likely to create similarly supportive and nurturing environments for their students (Marczely, 1990; Spiller & Fraser, 2001; Her Majesty's Inspectorate of Education [HMI], 2001). Graber (2002) outlined how teacher characteristics: subjective warrant, teacher beliefs, concerns and experience; teacher competencies: expertise, and knowledge, including general pedagogical, content, pedagogical content and curricular; and pre-impact behaviours: planning, curricular goals and value orientations; have an impact on teaching and learning in PE.

Morgan, Bourke and Thompson (2001) identified that prior experiences influenced teaching ideologies, practices and the performance of generalist teachers of PE in the primary schools. These experiences have a "distinct and traceable influence on an individual's future decisions, practices, and ideologies as a teacher" (Schempp & Graber, 1992, p. 333). Crum (1993) highlights that the apprenticeship of observation is highly influential in shaping future PE teachers perspectives, and in continuing the "vicious circle of the self-reproducing failure of PE" (p. 346). Stuart and Thurlow, (2000) highlight that "having been in classrooms for many years, they [teachers] have internalised through an apprenticeship of observation, many of the values, beliefs and practices of their teachers" (p. 114). For many generalist primary teachers, their own experiences of PE and sport in schools often combine into a negative attitude towards PE and PA (Morgan et al., 2001).

Researchers have found that many primary education pre-service teachers have negative feelings about their physical education experiences and many are not interested in repeating bad experiences and embarrassing situations they remembered (Carney & Chedzoy, 1998, Howarth, 1987; Portman, 1996). Kagan (1992) reported that primary student teachers with negative prior experiences held such strong beliefs about their abilities that it affected their learning at university. As Morgan et al., (2001) highlight, inadequate teacher education programmes in Australia have resulted in many generalist teachers being forced to rely on their own physical education and sporting experiences, some of which are negative, to guide their teaching and decision making in physical education. The consequences are such that as teachers these individuals then may replicate their own experiences, even when their desire is to achieve the complete opposite and create an alternative physical education. Prior experiences provide generalist teachers with many personal beliefs and stored ideas about PE, which are foundational in the development of generalist teachers' understanding of PE.

As “curricular and instructional decisions”, and consequently student learning, are affected by teachers’ belief systems (Pajares, 1992), PE programmes are likely to be influenced by teachers’ beliefs, attitudes, and values (Kulinna, Silverman & Keating, 2000). The matter is not straightforward, Kulinna, et al., (2000) studying the relationship between the belief systems of 42 PE teachers in relation to PA and fitness and what is taught in their classes, found that there was not a significant difference in the actual number of fitness activities taught between those who believed in high and low PA. They concluded that this points to the complex nature of the relationship between teachers’ belief systems and actions.

Compared to regular classroom teachers, PE specialists in the USA have been shown to teach longer lessons, spend more time developing skills, and provide more moderate and vigorous PA opportunities to students in primary/elementary school PE classes (McKenzie, et al., 1993; Sallis, McKenzie, Alcaraz, Kolody, Fuacette & Hovell, 1997). In a randomised control study of elementary PE lessons, PE specialists spent more class time on moderate to vigorous PA and promoting fitness than did classroom teachers with additional PE training and classroom teachers with no additional training (McKenzie et al., 1993). Another study (The National Institute of Child Health and Human Development Study of Early Child Care and Youth Development Network, 2003), using the System for Observing Fitness Instruction Time¹ [SOFIT] measurement technique, compared student activity in PE classes taught by PE specialists and general classroom teachers. Like McKenzie and others, these researchers found that PE specialists spent significantly more time teaching a lesson, and students in specialists’ classes spent more time being active and expended more energy. Further, specialists spent more class time on lesson management, knowledge, and skill practice and less time playing games (Davis, Burgeson, Brener, McManus & Wechsler, 2005).

The best evidence synthesis *Quality teaching for diverse students in schooling* (Ministry of Education, 2003) identified a number of research-based characteristics of

¹ SOFIT is an objective tool for assessing the quality of physical education instruction (1). It is a comprehensive system that provides a measure of student activity levels, lesson context, and teacher behaviour during class time. SOFIT involves the direct observation of lessons by trained observers and has been used to assess physical education in over 1000 schools throughout the United States. The main focus of SOFIT is on the coding of student physical activity levels and selected environmental factors (i.e., lesson context and teacher behaviour) that are associated with opportunities for students to be physically active and to become physically fit.

quality teaching, including teaching that focuses on student achievement (including social outcomes) and facilitates high standards of student outcomes for heterogeneous groups of students. Further, high expectations are necessary but not sufficient, and can be counterproductive, when not supported by quality teaching (p. vi). Similarly, extensive evidence from research in Scottish primary schools between January 1997 and June 2000, which aimed to raise attainment in the 5-14 age range, demonstrated that effective teaching, high expectations and an emphasis on achievement led to best practice and very good standards of attainment (HMI, 2001).

STUDENTS

Research has found (Daigle, 2003; Solmon & Lee, 1996) that students with positive feelings about their competence are more likely to try to learn the PA assigned by their teacher (cited by Lee, 2004). In another study (Ferguson et al., 1989), students who perceived exercise as beneficial, who exhibited positive attitudes about PE, who had good self-esteem and who perceived themselves as able to maintain commitments, were more likely to intend to exercise in the future than those who did not exhibit such attitudes. While factors outside of PE influence these attitudes and subsequent behaviour, PE could potentially influence intent to exercise among large groups of students if programmes specifically address these attitudes.

Researchers have also found consistent gender differences in terms of overall levels of PA and school-based PA, even after interventions to improve levels of, and attitudes to, PA (Lowden et al., 2004). Girls are less likely to engage in PA during play and lunchtimes (see findings in Interventions section).

Augmented practice occasions may effectively promote motor skill learning (McKenzie et al., 2000) and students with superior motor skills are likely to achieve greater PA engagement during lessons (Rink, 1994). A study of 47 elementary school children (Ayers et al., 2005) found that the more components of direct instruction young learners received, the more gains in knowledge and performance they demonstrated. "Teachers' ability to refine motor performances rests largely on their mastery of performance cues and skills analysis" (p. 136).

In a systematic review of what is known about the barriers to, and facilitators of, PA amongst children aged four to 10, Brunton, Harden, Rees, Kavanagh, Oliver, & Oakley (2003) found that few health promotion interventions, which address PA beyond school-based PE, have been rigorously evaluated. However, PE teachers in Texas

(Barosso, McCullum-Gomez, Hoelscher, D. Kelder, & Murray, 2005) where, since 2001, K-5 (approx. Year 6 in New Zealand) children have been required to receive 30 minutes PE a day, cited inadequate indoor and/or outdoor facilities and inadequate financial resources, along with large size classes and low priority relative to other subjects, as barriers to quality PE. Other interventions shown to be effective in a least one rigorous study (Brunton, et al, 2003) include: education and provision of equipment for monitoring TV or video-game use; engaging parents in supporting and encouraging their children's PA; and multi-component, multi-site interventions using a combination of school-based PE and home-based activities.

PROGRAMMES AND SCHOOL PA CULTURES

The Ministry of Education and SPARC (2006 in draft) have recently defined what it means to have a physical activity culture in a school community:

A physical activity culture in a school community is where the school promotes health-enhancing behaviour (physical activity) through organising the whole school community and involving the students, staff, whanau and others with strategies of lifestyle, policy and environmental interventions (Riddoch & McKenna in Cale & Harris (Eds.), 2005).

Schools that are committed to promoting and providing physical activity opportunities through areas such as curriculum, environment and the wider community, will share the following features:

- A school ethos that nurtures and values PA within the school;
- A curriculum that delivers high quality PE and HE programme to support the learning needs of students by teachers who are trained and have access to professional development;
- A safe and inclusive environment with good resources and accessible facilities that are made available to the wider community;
- Good quality co-curricular physical activity programmes designed to meet a wide range of abilities and appeal to diverse students, both in and out of school hours; and
- Collaboration with families, clubs, recreation providers and other community services to provide and enhance children's physical activity.

(Ministry of Education, 2006 in draft)

The Ministry of Education guidelines are consistent with the internationally recognised *Health Promoting Schools* whole school approach to the development of a healthy school community, and initiatives by governments and other international agencies, including McGeorge's (in Almond, 1997) concept of an 'Active School'. For McGeorge the overall aim of an active school "is to make physical activity a better experience for more young people more of the time, thereby increasing participation rates both inside and outside of school" (p. 129). In addition, McGeorge, outline five central features considered important in an active school, these being, general, curriculum, extracurricular, links with community and other schools, and training and resources. An EU Heart Health Initiative (2001) to promote PA in children and young people called for an environmental approach to promoting PA on the grounds that children are more likely to be physically active if they spend more time out of doors. Access to suitable environments and facilities are also key factors in children's participation in, and enjoyment of PA, including safe walking and cycling routes, access to countryside and open space as well as community sports and facilities (Kahn et al., 2002).

The APSP found that parents of children in one longitudinal study wanted their children to participate in PA but wanted more information about what the school does to promote PA both in school time and after school (Lowden, 2003). Researchers recommend closer links with parents to raise awareness of opportunities (Lowden et al., 2002, 2004), as well as greater community and inter-agency involvement to help to address the issue of time teachers have available to commit to promoting opportunities for PA (Lowden, 2003). The Ministry of Education (2003a) found that the effects of quality teaching are maximised when supported by effective school-home partnership practices focused on student learning. School-home partnerships that have shown the most positive impacts on student outcomes have student learning as their focus (p. vii).

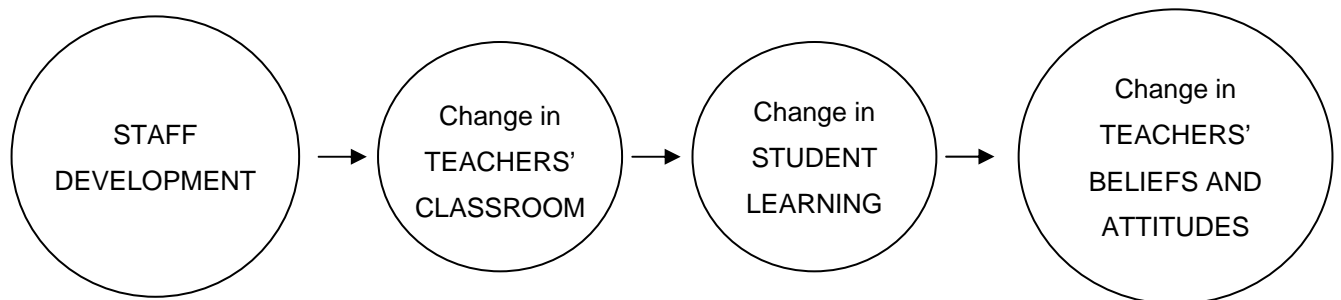
The literature highlights the important role school and wider community cultures and partnerships can have in fostering positive attitudes and increased participation in young people, while also indicating that these are areas that need attention and development.

PROFESSIONAL DEVELOPMENT

This section explores PD, how it works, and what makes it effective, with a particular focus on physical education. PD has been identified as the primary vehicle through which important educational changes are implemented (Hixson & Tinzmann, 1990). Research also shows that PD leads to better instruction and improved student learning when it connects to the curriculum (Cohen & Hill, 2001, 2005; Garet, 2001).

Guskey's (1985, 2002) model of Teacher Change (Figure 1) has been widely used as a framework for understanding and evaluating the impact of PD on teachers' practices and student learning. According to this model, it is the experience of successful implementation following the PD programme, that changes teachers' attitudes and beliefs.

Figure 1 A model for teacher change (Guskey, 1985)



Teacher development programmes therefore need not only to influence teacher knowledge but also to change teacher behaviour and ultimately student learning (Wade, 1985) if they are to be effective. There is also evidence PD programmes that emphasise student learning can change student behaviour and promote an effective learning environment (Hickson & Fishburne, 2004). Furthermore, a longitudinal study conducted by Loughborough University researchers, investigation the National PE and Sport PD programme, have demonstrated that the perceived impact of PD on pupil learning tends to motivate teachers to continue to develop their practice (Armour & Makopoulou, 2005).

Teachers who participate in staff development are more likely to use recommended teaching practices in their classrooms and to contribute to the enhancement of their schools' PE programmes (McKenzie, et al., 1993, 1997; Sallis, et al., 1997). However, as Killion (2005/6) points out, "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 (p1).

Moreover, three inter-linked systematic reviews undertaken by the EPPI-Centre in the UK (2005) indicate that collaborative continuing professional learning in particular has the potential to generate high quality teacher learning that impacts on pupil learning. Collaborative continuing PD refers to programmes specifically planned to encourage and enable shared learning and support between teacher colleagues on a sustained basis, of at least twelve weeks or one term. The EPPI-Centre review, including synthesis of over forty studies of PD, highlighted that pairs of teachers working together were especially effective, with teachers demonstrating an increase in confidence, enthusiasm, commitment to changing practice and a willingness to try new ideas. (<http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=274>).

This is consistent with research presented by Scott (2002) at the *Improving PE in Primary Schools* Conference (2002) that focused on the importance of continuing PD in primary PE. At this conference, Scott advocated using a visiting specialist teacher [similar to adviser support in the New Zealand context] to raise the confidence of generalist teachers and contribute to team planning/teaching; he also highlighted the need for collaboration time for the lead teacher, class teachers and the specialist to meet. This may require new organisational structures that promote shared responsibility, collaboration, and continual learning for both students and adults (Armour & Duncombe, 2004; Armour & Yelling, 2004; Hixson & Tinzmann, 1990).

As Armour and Duncombe (2004) suggest:

... 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; low levels of PE preparation in some initial teacher training courses result in teachers with a very wide range of needs; schools struggle to release teachers from the classroom to attend professional development activities and they face an inherent tension in disrupting pupils' learning in order to improve it; teachers learn in a wide range of ways including both formal and informal contexts; and CPD providers need to be able to tailor their activities to teachers' very specific needs and the exigencies of individual school contexts.(p.9)

IMPACT OF PROFESSIONAL DEVELOPMENT ON TEACHERS' CONCEPTUAL CHANGE

According to Graber (2006) teachers' concepts of PA, both curricular and co-curricular, become

... more advanced as individuals gain training and experience (Ennis, Mueller & Zhu, 1991; Walkwitz & Lee, 1992), and are influenced by both teacher educators (Housner, Gomez, & Griffey, 1993a, 1993b) and individual teacher education programmes (Rink, French, Lee, Solomon, & Lynch, 1994), (p. 495).

Hixson and Tinzmann (1990) consider that PD is vital for achieving meaningful change in schools, and that teachers need opportunities to develop the attitudes and beliefs, as well as the knowledge and skills, necessary to translate new ideas and concepts and to incorporate them into their day-to-day routines. Teachers' own self-concepts and sense of efficacy are all areas which staff developers are increasingly called on to address. Five basic functions of PD strategies are cited by Hixson and Tinzmann (1990):

- Expanding the knowledge base;
- Learning from practice;
- Developing new attitudes and beliefs;
- Providing opportunities for self-renewal; and
- Collaborating with, and contributing to, the growth of others.

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 (Nespor, 1985; Hutchinson, 1993; Pajares, 1993; Ennis, 1994). Knowledge disavowal can present a formidable barrier to curricular innovation and the development of expertise (Ennis, 1994).

As Ennis notes, "teachers' beliefs are formed over their professional careers through chance observations, intense experiences (either positive or negative), or a series of events that gradually convince them of the 'truth' of some rationale or relationship" (1994, p. 169). 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 & Tinzmann, 1990; Pajares, 1992).

Teachers' willingness to engage in PD is variable. Faucette (1987) conducted a study in which teachers were identified as assimilators, conceptualisers or resisters. Assimilators were highly motivated to try the new curriculum; conceptualisers feel they did not possess enough information to implement the programme in their classrooms; and resisters judge the innovation to be incompatible with their current conceptualization of PE. Resisters disavowed the knowledge about movement education provided in in-service training, and expressed personal and informational concerns and cited environmental problems, such as large class sizes, that were barriers to success (Faucette, 1987; Fraser-Thomas & Beaudoin, 2002).

TEACHERS' KNOWLEDGE, UNDERSTANDING AND SKILLS IN TEACHING PHYSICAL EDUCATION

Studies have found that lack of PE knowledge among primary school generalist teachers contributed to uncertainty about what they were doing (DeCorby et al., 2005; Hart, 2005; Morgan & Bourke, 2004), whereas teachers who demonstrate a good knowledge of PE, good skills, and a readiness to participate are more likely to encourage a positive attitude to PE and PA in students (Ryan, Fleming & Maina, 2003). 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). As Ennis (1994) points out, teachers, like their students, need to become lifelong learners who pursue continuing growth in their knowledge, understanding, and skills.

PERCEIVED COMPETENCE AND CONFIDENCE TO TEACH PHYSICAL EDUCATION

PD can make a difference to teachers perceived competence and confidence in the teaching of PE. Hickson and Fishburne (2005) worked with three volunteer elementary teachers in an intervention based teacher development program, in Canada. Each teacher had five and a half hours of one on one PD, which focused on: the role of PE for children; the importance and understanding of development appropriateness; putting theory into practice; effective teaching; instructional strategies; the effective teaching model, the theoretical framework, and its implementation; and the importance of reflection. Student behavioural data, pre- and post-intervention, in physical education classes were recorded and analyzed, and attitudinal data was also collected through teacher and student interviews. After PD the three teachers, interviewed by

Hickson and Fishburne (2005), reported increased confidence and beneficial effects in terms of understanding the relation of PA to overall child development:

Overall, the opinions expressed by all three-teacher participants indicated that participation in the teacher development program had a very positive effect on their PE teaching and was viewed by all the teacher participants to be very beneficial to their professional growth. Further, the teacher participants remarked that the effective teaching model had become a regular part of their teaching repertoire and was also being utilized throughout the school curriculum. The teacher development program was viewed to be very useful in their professional growth and was valued tremendously (p.13).

Very similar results were reported in an American study by Faucette et al., (2002) of classroom generalist teachers' responses to a 2-year long PD programme, associated with Project SPARK. Involved in 2yr PD programme, 16 teachers were provided with opportunities to attend large group workshops (totalling 48hrs) and also have advisers come and work with them individually (initially twice a week during year one, and then once a week during year 2). Using both quantitative and qualitative methods, including interviews, questionnaires, and PD session evaluation forms, Faucette et al., (2002) found that teachers became increasingly confident in their abilities to implement a PE programme and appeared to appreciate the impact on students. The programme was successful in that participants who initially lacked confidence to teach PE in their primary schools, became willing and able to implement the curriculum.

TEACHERS' ABILITY TO DETERMINE STUDENTS' PROGRESS IN MOVEMENT SKILL DEVELOPMENT

An explicit focus on the development of movement skills with PD appears to have an impact on teachers ability to determine student progress in PE classes. Hart (2005) set out to assess the influence of physical education methods courses on the knowledge of elementary education majors in the area of fundamental movement skills. The data was obtained by using a questionnaire to assess students' knowledge by having them list fundamental movement skills before and after completing an elementary physical education methods course. The results suggest completion of a physical education methods course positively influences elementary education majors' knowledge of fundamental movement skills (Hart, 2005).

In response to a questionnaire, all of the primary school teachers who participated in PD workshops as part of Move it Groove it (detailed in the interventions section of this literature review), a Australian PA in primary schools initiative (New South Wales Health, 2003) strongly agreed (nine) or agreed (eight) that the fundamental motor skills

workshop would be useful to their teaching practice. Teachers' comments reflected learning in the following areas: being able to break down the skill being taught, more ideas for skill teaching, more motivation to teach fundamental motor skills, and re-evaluation of current ways of teaching skills.

INTERVENTIONS

Outlined in this section is a brief overview of three major primary/elementary school based PE -PD programmes which focus is on the development of both curricular and co-curricular PA. In addition there is a series of brief summarises on other projects detailed focused sole on motor skill development or physical health outcomes.

It is worth highlighting that curriculum PE in the commonwealth countries mentioned, England, Wales, Scotland and Australia, has similar holistic objectives, and is primarily delivered by generalist teachers in primary schools. Alternatively, specialist PE teachers most often deliver PE in elementary schools in the USA, and focus mainly on motor skill development, health related physical activity and sport specific activities. Some US states offer more holistic programmes, however there is limited literature relating to PD programmes in these areas.

SPORT, PLAY AND ACTIVE RECREATION FOR KIDS: PHYSICAL EDUCATION (SPARK PE) – USA

SPARK PE was designed to encourage health related PE curricular, in which physical activity is maximised during PE lessons to improve students' fitness, skills and enjoyment. Elementary teachers, kindergarten through sixth grade (equivalent of New Zealand Year 1 - 7) are provided with a curriculum programme, including units, lessons, activities and "suggestions for managing children in PE classes, and instructions for inclement weather activities, strength and conditioning, warm-up, and a fitness self-testing program" (Dowda, Sallis, McKenzie, Rosengard, & Kohl, 2005). SPARK PE advocates for specialist PE teachers in primary school setting, but recognises that funding does not always make this possible; therefore it provides PD programmes that cater to both types of teachers. In addition to the curriculum guide and resources, teachers are also required to engage in a staff development programme designed to:

- Enhance teachers commitment to health-related PE;

- Help teachers understand the SPARK curricular units and activities;
- Develop management and instructional skills needed to effectively implement the SPARK programme; and
- Assist teachers to overcome barriers they faced in implementing the programme.

As a programme exclusively focused on the development of health related PE, SPARK PE has limited relevance to the New Zealand setting where the PE curriculum, and therefore ideally PE lessons, have four much broader aims, as well as the additional objectives of the New Zealand education system. However, the extensive research generated, and results, from an initiative of the size and magnitude of SPARK PE, can provide some indicators for the development of PD programmes for generalist teachers of PE in New Zealand. Of particular note is the finding that classroom teachers need extensive training and support, over an extended period if PD is to have an impact. SPARK PE found that the following model of PD was effective:

- Workshops run out of the school setting, consisting of at least 32 hours over a 7-11 sessions in the first year and 9 hours in the second year, and 6 in year three;
- Followed up by, in school support, provided by a PE specialist, during classroom teachers PE lessons (bi-weekly, first year to bi-monthly in year three) over the three year period;
- Teachers provided with sequenced lesson plans that clearly identified developmental appropriate activities, as well as teaching and management cues; and
- Teachers have release from school to attend workshops, and cover provided.

(Sallis, McKenzie, Alcaraz, Kolody, Faucette, & Hovell, 1997; McKenzie, Sallis, Faucette, Roby, & Kolody, 1993; McKenzie, Sallis, Kolody, & Faucette, 1997).

NATIONAL PHYSICAL EDUCATION AND SCHOOL SPORT PROFESSIONAL DEVELOPMENT PROGRAMME (PE-CPD) - ENGLAND

The National PE-CPD programme aims to improve the quality of teaching, coaching and learning in PE and school sport. Piloted in 2003-04, the programme is now

available in all areas of England, supports the implementation of the targets detailed in the *National PE, School Sport and Club Links* (PESSCL) strategy. PE-CPD aims at:

- Improving the quality of teaching and learning in PE and school sport in order to raise the attainment of all pupils;
- Increasing the understanding of the use of high quality PE and school sport in whole school improvement;
- Enhancing the links between high quality PE and school sport and the promotion of physical activity and health;
- Encouraging innovative interpretation of the national Curriculum for PE to ensure it closely meets pupils' needs and ensures their maximum achievement; and
- Enhancing cross-phase continuity, to ensure pupil progress, in order to support a whole school approach to improvement and raise standards.

(Department of Education and Skills, 2003)

The PE-CPD programme offers all teachers in primary, secondary, and special schools access to a range of taught and resource-based modules, including, for example modules related to:

- Learning through PE and School Sport;
- Assessing progress and attainment in PE;
- Evaluate to inform and improve;
- Getting pupils who need support more involved in PE and school sport
- Helping your pupils to be competent movers;
- Is your PE and school sport inclusive? and
- Specific PA's such as, dance, gymnastics, athletics, games, swimming, and the outdoors.

The modules and resources, designed and developed at a national level, are delivered locally, by 150 Local Delivery Agencies across the country.

An independent evaluation programme by Loughborough University of PE-CPD is currently in its third year. The research methods used include surveys, individual interviews (both face-to-face and telephone), observation, focus groups, case studies,

literature searches and desk studies. Across a three-year period the researchers, have released a series of interim reports, which are available from:

http://www.lboro.ac.uk/departments/sses/postgraduate/teachertraining/pubs/rep_3_mnth_13-18.pdf and

http://www.lboro.ac.uk/departments/sses/postgraduate/teachertraining/pubs/rep_4_mnth_19-24.pdf

In two conference presentations, Armour and Makopoulou (2006a, 2006b), presented some initial findings from the evaluation, these indicated that:

- The National PE-CPD programme involved PD process and practices that encouraged and facilitated practical, active and in interactive professional learning;
- Teachers benefit most from PD when they were able to learn from one another, with a framework that provided for continuous peer support and encouragement;
- Sustained and collaborative continuing PD is linked with positive learning outcomes;
- Continuing PD can have a substantial impact upon teachers' learning and pupil learning;
- The delivery of 'one-shot' standardised modules for learning needs, without follow-up support were a less effective model for PD; and
- "In planning for career-long learning for teachers, we should apply what we know about effective learning" (2006a, p. 5).

The National PE-CPD programme identifies similar aims to the New Zealand vision for Active Schools, however the English approach appears to provide a model for PD that teachers can engage in a varied times, and over an extended period. While the research has not yet highlighted the impacts such an approach is having on student achievement, school programmes or the broader PA culture of schools, the interim reports provide some alternative views of PD that could be considered in the New Zealand context.

NATIONAL PHYSICAL EDUCATION AND SPORT ACTION PLAN (PESS) - WALES

Since 2003, PESS has been underway in Wales. PESS, based within each local authority, runs out of 'Development Centres' which help to set up transition links between schools (secondary and primary) and unite them in working towards common aims to raise the standard of physical education and school sport. A development centre supports a 'cluster' of schools, usually based around the secondary school and including its feeder primary schools and other partners, which are unique to each centre. Funded at a national level, the role of the development centres is to identify and share existing good practice and to strengthen PE and school sport opportunities within schools. The aim of PESS partnerships is:

- To raise standards in PE by ensuring that all schools have effective teaching and learning in PE which is essential for achieving consistency of attainment of improvement in standards across Wales;
- To be committed to managing the subject effectively within the whole school curriculum by providing 2 hours per week of high quality PE for each child, in order that teachers have sufficient time to deliver the requirement of the National Curriculum. In addition, opportunities should be provided for teachers to prepare and plan for future changes to the curriculum and within education; and
- To develop continuity and progression in the development of young peoples knowledge, understanding and physical skills across the partnership and between key stages.

Professional development opportunities provided by the initiative in its early years focused mainly on non-specialist primary teachers, with reports of over 2500 teachers receiving training,

Her Majesty's Inspectorate for Education and Training in Wales (ESTYN), undertook an inspection of the PESS initiative, and reported its findings in 2006. Their report drew on interviews with advisers, initial teacher education providers, head teachers, teachers, pupils, officers from the Sports Council of Wales, and specialists appointed to deliver different strands of the initiative. In addition, ESTYN examined inspectorate reports on 247 primary schools in Wales, completed during September 2004, until December 2005.

The findings of the evaluation are available at http://www.estyn.gov.uk/publications/remit_8.pdf. The Estyn indicate that the PD provided for non-specialist teachers had:

- Enhanced primary teachers competence and confidence in their teaching of PE;
- Increased teachers enjoyment of PE and their appreciation of its value to their pupils;
- Improved teaching strategies, and significantly improved teachers' knowledge and understanding of physical education; and
- Enhanced assessment practices in PE.

The PESS model offers some though provoking ideas about how continuing PD is structured and delivered. A lack of detailed evaluative research, limits what can be understood about this initiative, but further investigation of the PESS approach should be considered.

ACTIVE PRIMARY SCHOOL PROGRAMME (APSP) - SCOTLAND

The APSP, set up by SportScotland in August 2000, employs primary school teachers as coordinators to work across a group of schools to create flexible pathways for young people to adopt physically active lifestyles. An 'Active Primary School' provides opportunities for young people to be more physically active within the school day and beyond. The APSP coordinator consults closely with teaching staff, parents and pupils to review and improve the school's PA programme. The main themes supported by active primary school coordinators are active play, PE, after-school sports and active travel.

The Scottish Centre for PE, University of Glasgow was commissioned by SportScotland to evaluate the three-year pilot of the programme consisting of seventeen schools across five local authorities. This evaluation focused on:

- Children's activity levels and their attitudes to PA;
- Policy directions guiding the actions of head teachers/staff;
- The contribution of sport and PA to learning and ethos targets; and
- The role and the effectiveness of the APSP coordinators.

A number of complementary components were repeated in each of the three years of the evaluation, these included pupil-classroom surveys, pupil-parent surveys, telephone and face-to-face interviews and focus groups with head teachers.

Researchers evaluating the APSP pilot in Scotland (Lowden, Davidson & Powney, 2002; Lowden, Quinn & Kirk, 2004) found:

- That training for teachers and others in promoting pupils' physical activity increased over the course of the programme from 2001-2003;
- The vast majority of the coordinators' schools in the pilot clusters (around 90% of schools) allocated funding to support staff to undertake relevant training courses, such as coaching qualifications;
- APSP had a positive impact on the levels of PA across all of the pilot schools;
- That school consistently worked to provide a varied and accessible range of activities for students to engage in;
- Schools made conscious efforts to develop their planning for PE and give more time to issues associated with PA in meetings; and
- There had been little increase in the duration of weekly curriculum PE lessons (an average of 64 minutes a week in 2001 increasing to an average of 66 minutes in 2003).

OTHER INTERVENTIONS

Internationally there are a series of initiatives aimed at enhancing students' cardiovascular health, and basic movement skills. Below are details and findings of three of these initiatives, selected to demonstrate the range of interventions that are being imposed in schools. Articles by Stone, McKenzie, Welk & Booth (1998), and Cale & Harris (2006), provide evaluations of school based interventions aimed at promoting young people's physical activity.

Child and adolescent trial for cardiovascular health (CATCH) – USA

CATCH is one of the most widely implemented and evaluated examples of a multicomponent, school-based program that includes an educational curriculum along with a behavioral component and school environmental change (Luepker, Perry, McKinlay, et al., 1996; and Nader, Stone, Lytle, Perry, Osganian, Kelder et.al., 1999). Initially a school-based field trial/intervention with a sample size of ninety-six

elementary schools, in four states, CATCH was an experimental programme designed to address amongst other things, physical activity levels through teacher training and support, with the aim of increasing the levels of fun moderate to vigorous PA students in PE classes engaged in.

Over a three year period researchers monitored a cohort of initially Year 7 students in each of the ninety-six schools (56 intervention, and 40 control) to see if teacher PD, enhanced PE classes in a manner that provided opportunities for students to engage in more moderate to vigorous activity. Three years after the start of the intervention, data was collected for 3,714 students. Leupker, et al., 1996; and Nader, et al., (1999) found that while the intervention group advantage with respect to physical activity behaviour narrowed over time, the intervention group continued to average more minutes of daily vigorous activity. Some of the CATCH intervention schools included a minimal whānau component, which appeared to enhance knowledge and attitudes related to physical activity (Nader, et al., 1999). A follow up study, of the initial cohort, reportedly found a significant difference for out of school vigorous activity still existed three years after the CATCH intervention (Stone et al., 1998).

Kelder, Mitchell, McKenzie, et al., (2003) found that it was essential for teacher to be provided with PD, preferably with opportunities to “observe expert conduct PE activities and then practice new instructional strategies themselves” (P. 473). Kelder, et al., (2003) found that specialist teachers were more prepared and able to implement the CATCH programme than classroom teachers, therefore they felt that classroom teachers may need to supplement their practice/programme with specialists.

CATCH offers some ideas for interventions related to school-based PA, it is worth noting that the PE curriculum in the four states, differs significant from that of New Zealand, in that it is predominantly focused on sport and movement skill development.

Move it, Groove it - NSW, Australia

The *Move it, Groove it* initiative undertaken by New South Wales Health was introduced to develop a model aimed at enhancing PA knowledge, understanding and practices in order to increase PA levels in primary school children (NSW Summary Report, 2003, http://www.health.nsw.gov.au/pubs/m/pdf/move_groove.pdf). The one-year intervention aimed to improve children’s physical activity levels and mastery of fundamental skills through a Health Promoting Schools approach. The initiative focused on supporting teachers and creating supportive environment and health

school policies; through teacher PD, a buddies system, website support, funding for the purchase of PA equipment, and the development of school project teams.

An evaluation, involving 1045 children (aged 7 to 10 years) in nine intervention and nine control primary schools occurred during the first year of *Move it, Groove it*. The evaluation utilised pre and post observational surveys of:

- Mastery or near mastery levels for each of eight fundamental movement skills [balance, throw, catch, sprint, hop, kick, side gallop and jump];
- Proportion of PE lesson time spent in moderate to vigorous PA and vigorous PA; and
- Teacher and lesson related contextual covariates.

van Beurden, Barnett, Zask, et al., (2003) and van Beurden, Barnett, Zask, and Dietrich, (2002) found that when the *Move it, Groove it* initiative was implemented in PE classes there were significant improvements in fundamental movement skill mastery, without adversely affecting children' moderate to vigorous levels of PA. Of note were student improvements at: Year 4 in static balance (75.4%); and Year 5 in side gallop (59.0%) and the achieved the catch (56%). These two studies also highlight gender similarities, both boys and girls improved in balance, and differences, where the "skills best performed by boys (throw and kick) rated poorest for girls. Conversely the hop and side gallop which rated, after balance, as the skills best mastered by girls, were among the more poorly performed skills for boys" (van Beurden, et al., 2002).

Within New Zealand, the development of student movement skills is a key focus with the Ministry of Education's National Education Goals, and therefore research and initiatives that focus on movement skills needs to be explored. *Move it, Groove it* provides a model for improving eight movement skills, in combination with changes to teacher PD and resourcing, however the emphasis on movement skills, and increases to moderate to vigorous PA exclusive of a holistic framework for wellbeing need to be considered in line with the broader interpretation of PE outline in the New Zealand HPENZC.

Basic Moves - Scotland

Another Scottish initiative is *Basic Moves*, a programme underway since 2002, has been designed to assist children develop their basic movement skills so they will be

able to take part in physical activity throughout their lives. The Basic Moves Programme combines quality teaching, and appropriate learning experiences and opportunities for children to practice physical movements. Basic Moves comprises a number of projects that revolve around four closely interrelated strands: programme development, staff training, resource development and research.

The most detailed work to date has been the East Lothian longitudinal project, which has been tracking the impact of a generic movement programme on six classes of children, from the first year of their primary schooling (Jess, & Collins, 2003). Initial findings indicate that within a relatively short space of time, Basic Moves has made a significant impact on PE developments in the schools surveyed (Jess, Dewar, & Fraser, 2004). Initial results from this study should be available were to be available late in 2006, but at the time on this report were not available.

GAPS IN THE LITERATURE

The purpose of the review was to draw together national and international literature that highlights the role and place of PA, benefits of PA/PE, barriers and facilitators to quality PA/PE, impacts of PD on teaching PA/PE, PA/PE interventions, relevant to education settings, particular primary schools. A particular challenge in developing the literature review and selecting relevant material to include was the dominance of literature focused on children's physical health and interventions to address, aerobic fitness and body weight. While this literature offers some insights for school based PA, it was felt that reviewing this literature was not within the mandate of this research report.

An additional, consideration, was representing literature that was relevant to the New Zealand context, and the current curriculum document and initiatives existing within this context. While the USA offers the most extensive literature base focused on teaching PE in the elementary school, much of this is related specifically to the primary school specialist PE teachers, and to curricula focused solely on movement skill development and sports performance. This makes it less relevant in light of the New Zealand HPENZC and the high proportion of generalist teachers delivering PE in primary schools.

The literature process has therefore raised some gaps that warrant a mention. These gaps are the lack of:

- New Zealand-based research on the state and place of PE in primary schools;
- Understandings of generalist primary teachers interpretations, experience and beliefs about of PE and PA, both in New Zealand and internationally; and
- Research on PD of teachers in relation to a broader PE curriculum that aims to develop students in a more holistic manner, than simply focusing on movement skills.

CHAPTER FOUR: CASE STUDIES

INTRODUCTION

This section of the report covers the findings from ten case studies in primary schools. The main purpose of carrying out school case studies was to examine the impact of the professional learning on the delivery of curricular and co-curricular physical activity.

In each case study between two and four teachers have been given pseudonyms, however there may be others who are listed as, for example, 'Teacher 21'. This occurs since there were 54 teachers in total who responded to the second questionnaire, and the number of the teacher corresponds to this list.

Ministry of Education contracts and initiatives that are not directly concerned with physical activity or physical education are not explained, but may be found on the Ministry website at: www.minedu.govt.co.nz.

There is frequent mention of a Ministry of Education resource - *Moving in Context*, which refers to two resources that are part of the Curriculum in Action series published by the Ministry of Education (2003b, 2003c) to support learning in physical education. There is a Moving in Context Resource for Year 1-6 and another for Year 7-8.

Throughout the case studies, where deemed necessary, footnotes have been used to explain health and physical education terms the first time they are mentioned. In addition, some common terms are represented by acronyms, in the interests of brevity. These terms are as follows:

- Regional Sports Trust (RST);
- School Support Services (SSS);
- Physical Activity Initiative (PAI);
- Physical education (PE);
- Physical activity (PA);
- Professional development (PD);
- Health and Physical Education in the New Zealand Curriculum (Ministry of Education, 1999) (HPENZC);
- Health and physical education (HPE);
- Board of Trustees (BOT); and

- Deputy Principal (DP).

CASE STUDY ONE: PLAINS SCHOOL

Plains School 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. The age range of the teachers was 26 to 55 years, and they had between six years and more than fifteen years teaching experience. Midway through 2006 two staff left and were replaced with long-term relievers. Plains School advertised early in Term 4 for two permanent staff to begin in 2007.

The male Principal and four teachers completed the initial questionnaire, however, only three teachers completed the second questionnaire. The two long-term relievers had not been fully involved in the PAI, and felt unable to comment on change. Two teachers, referred to in this case study as Hannah and Harriet, were extensively involved in the research project. They were interviewed twice, observed delivering a PA opportunity, their students were interviewed, and the parents of their students completed a questionnaire. The response rate from the parents was 75 percent. Hannah taught Year 4 and 5 students, Harriet taught new entrants and a Year 1 class. The Principal was also interviewed at the end of the intervention.

All teachers at Plains School had previously been involved, to varying degrees, with in-service PD relating to PE. This PD had been focused on planning for and teaching PE as a classroom teacher. Some of the teachers had also been involved in the Perceptual Motor Programmes (PMP) training and had also attended a range of KiwiSport² courses. However, none of the teachers at the school had experienced much PD relating to the curriculum document: *Health and Physical Education Curriculum in the New Zealand Curriculum* (Ministry of Education, 1999). One of the five teachers remembered receiving help with the implementation of this curriculum from a lead teacher, so felt that she had only ever received “their interpretation... not the full picture” (Harriet). Consequently she felt that the curriculum, (possibly due to her limited understanding), was not useful for working with juniors as it was “obscure and abstract.”

² KiwiSport, is a programme developed by the Hillary Commission, to enhanced sporting opportunities and ensured that children enjoyed sport, gained skills and became lifelong participants.

The sole focus for PD for 2006 was the PAI as the school had recently completed their involvement in the Numeracy project. In 2007, the school planned to work with a local cluster on information and communication technology professional development (ICTPD).

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

At Plains School, teachers were expected to deliver PE as part of their classroom programme. Two of the five teachers were involved in organising school wide events, one of whom also had the sports coordinator role, and was in-charge of PE, including the budget. Another teacher was in charge of REBEL KiwiSport Challenge³ and had responsibility for junior swimming.

Teachers who completed the questionnaire (n=4) before the intervention felt that the school successfully promoted health-enhancing behaviours throughout the whole school community, and that this was reflected in the school's policy and programmes. The bell times at Plains School had been changed in 2006, to ensure that students had no longer than one hour in the classroom before having a break. This provided students with increased opportunities to be active, even if, for shorter times. Students appeared to have a positive attitude towards PA and the school's wider community was very supportive of PA. The school's physical environment provided a range of spaces in which children could engage in physical activities including adventure playgrounds for juniors and seniors, tennis courts, a swimming pool, two large fields for children to access for physical activities. A hall was used for curricular PE if the weather was inclement.

Curricular physical activity

Prior to the professional learning opportunities offered with the PAI, PE at Plains School was centred on local events, the interschool cross-country, traditional activities

³ These are sponsored by REBEL Sport and promote participation, skill development, fun and FairPlay in school events. The REBEL KiwiSport Challenge is a community event that involves children participating in physical activity in schools, supported by their friends and family members. While it is non-competitive for the children, the schools compete against one another for spectator support from parents, grandparents, other family members, friends, and members of the community. The schools with the most spectators in relation to children taking part win a share of a major sporting goods prize.

such as gymnastics and sport with a focus on motor skill development. Teachers understood PE to be about the teaching of physical skills that would allow students to participate in games, sport and activities that might be useful now and in later life.

Individual teachers chose when to fit PE in; this usually occurred in the afternoon. They also included daily fitness in their morning programmes. The four classroom teachers reported that they took their class out for daily fitness which usually involved skipping, relays or some form of running. Teachers were provided with a school overview, reflective of interschool events, and are “supposed to follow it” (Harriet, interview one).

Harriet felt that this did not suit her junior students, as they were not involved in these events. While the overview helps the teachers keep to the school programme, she found it difficult to follow with her classes, and felt “locked into” doing the right thing. The school’s resources did not cater for the junior students needs for developmentally appropriate resources, as they were generally traditional forms of sports or gymnastics equipment

In 2005, Hannah attended an in-service teacher resource course that encouraged her to think about managing the change of the school’s focus from sport to PE. She was aware of a need for change and felt that this was something she would need lots of support with. She also wanted the school to explore how PE could be taught at times other than in the afternoon.

Co-curricular physical activity

Plains School offered co-curricular PA opportunities before school, during morning breaks, at lunchtime and after school. Students could access a range of PA equipment available from sports shed monitors, or could take skipping ropes from their classrooms. They used this equipment at school, for example, to play four square, play a sport (soccer, tennis), or use the skipping ropes. They could also take equipment home to play with. They were also able to climb trees at school or use the adventure playgrounds. Senior students had access to a field and a playground across the road.

The teachers of senior classes also had their students engaged in school tabloid sport, which was usually associated with upcoming interschool events, but also included such things as paddertennis tournaments. The junior classes “always have sport and recreation time, focused on enjoying the body” (Harriet, interview one).

The school was involved in the REBEL KiwiSport Challenge. The community of Plains School was very supportive of this event, and as a result they had won significant major prizes. It was a way that the school fostered and maintained community links, but more importantly, teachers saw it as an “important way [that] they could access free gear” (Hannah, interview one).

THE PHYSICAL ACTIVITY INITIATIVE

During the later part of 2005, Hannah and the Principal attended a teachers’ resource day run by the SSS, RST and the primary school sports director. This opportunity helped Harriet clarify in her own mind what was meant by PE and what was meant by PA. They also did “little fun games,” which they then adapted. Hannah also attended the PAI introductory workshop held the next day. Some of the material was repeated, but she found that these two experiences had significantly shifted her understanding of PE.

Two teachers, one from each of the junior and senior syndicates, and when possible, the Principal, attended half-day workshops with their cluster schools. The SSS Adviser ran the four workshops, which were organised throughout the year. Hannah commented:

These were really practical. [There was], a practical component, where we played the games, [then] talked about and discussed them, just the same way as we did with the children. [We] shared with other schools [about] how things have been going. We have had things like Teaching Games for Understanding (TGfU); Movement in Context; in through, and about movement; and one on Adventure Based learning (ABL). (Hannah, interview two)

At the workshops, there had been a significant focus on aspects of quality teaching such as, developing questioning techniques, sharing learning intentions, discussing success criteria and reflecting on the lesson with the students.

The SSS Adviser had been to the school and held professional development sessions at staff meetings, with the assistance of the lead teachers. This included modelling some activities that could be used within curriculum time to address particular learning intentions. The broader aspects of HPENZC as well as quality teaching and learning in PE were explored.

The SSS Adviser worked through the following activities with each lead teacher: demonstrated a PE lesson for each teacher and their students; observed each teacher

teaching a PE lesson; provided feedback about the lesson; and recorded a lesson on DVD for teacher reflection. The adviser also worked with the lead teachers and Principal to develop a long-term plan for PE in the school.

The teachers at Plains School particularly valued the PD that focused on:

- How to question children to get them to think about the skills they need or use to complete an activity;
- In-school support with facilitator demonstrations and observations;
- The chance to work in a group and share ideas with others in the same situation;
- Practical workshops that encouraged involvement in games; and
- Working with their own class while being observed and recorded by a facilitator so that feedback could occur at a later date, if necessary.

The teacher in charge of sport went to the Active Schools Toolkit⁴ training at the beginning of the year, where she received the red bag of gear, and looked at playground stuff” (Harriet). While she found this interesting, to her it did not relate to the PD they were involved in with the SSS. At the beginning of term 4, 2006 the school signed up for Active Schools, which the Principal understood to be focused on “getting kids active at lunchtimes and outside of teaching time.” The Principal went on to say:

*An Active Schools Facilitator (AFS) ... [arrived] here [to the school] at lunch time and it was a beautiful day. [The] sun was shining, and all my kids were involved in some kind of games, so he stayed for about seven minutes. [He then] said “this is fantastic” and [then] off he went. It was bizarre really. He, [the AFS facilitator], is talking about having more organised adult input into the kids playing and games. Now I don’t know where I stand with that. ... when he came ... he [saw that] all my kids [were] involved in some sort of game or occupied in some way on a [sunny] day like this. Why do I need to have an adult out there?
(Principal interview)*

⁴ Active Schools Toolkit, aims to help schools develop a PA culture, by providing: ideas for providing PA in school contexts and across the curriculum areas; and ways to increase co-curricular PA. Released by SPARC in 2006, the Active Schools Toolkit, is designed to help schools meet the requirements of the NEG’s and NAG’s relating to PA that became legalisation at the beginning of 2006.

It is worth noting that during 2006 two teachers at Plains School left during the middle of the year and were replaced. Staffing changes during the year meant that the two new teachers only had five months involvement in the PAI.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

Before the PAI, teachers at Plains School understood PA to be about engaging students in movement activities, ranging from play to organised games and sport. Two teachers understood that PA involved lifting the heart rate and promoting fitness. All teachers understood PE to be about the teaching of specific physical skills, “including gymnastics [and] ball handling” (Teacher 64, questionnaire one) that would allow students to participate in activities, games and sports.

After the PAI professional development, the teachers understanding of what PA meant had shifted. It was now understood to include all the activities children do, whether it be walking, running, biking to school or playing sport.

The teachers’ understanding of PE had also shifted, now being defined more broadly, to include skills and knowledge. For Harriet and Hannah, their conceptual shift related mainly to how PE was taught, and not to a change in content. In her second interview, Harriet suggested that the PAI had focused on teachers learning about a particular delivery style. This moved teaching away from teaching skills for skills sake, as in drilling skills, towards teaching skills within a game and then, changing the game and introducing new skills, as the students required them. Harriet and Hannah also reflected on the line of questioning that went with this that encouraged students to think about how they played games. This new understanding by Harriet and Hannah reflected a more student-centred approach to learning. Harriet commented that the other teachers, excluding Hannah, “did not have the understanding philosophy behind the change” (Harriet, interview two) and that for teachers who had not been lead teachers this would take more time to grasp.

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

Hannah and Harriet had both gained an understanding of new approaches to teaching PE as well as the structure of a PE lesson. This shift in understanding was centred on

two components of the PD -the principles of quality teaching and the curriculum model, Teaching Games for Understanding (TGfU)⁵. This learning had led to a change in the structure of their lessons and the place/role of the students within them. The other teachers in the school had also recognised that embedding the principles of quality teaching into PE was beneficial for student learning. For these teachers, they had recognised the importance of transferring the knowledge they had previously gained, as part of the Assess to Learn contract, into the PE context.

Structure of lessons

Prior to involvement in the PA Initiative, teachers reported that their lessons typically took the form of a warm-up, skill teaching/practice and then minor games, followed by a warm down. The professional learning opportunities had shifted this significantly, for both lead teachers and the one other teacher who had been involved all year.

Major changes in lesson structure, for all three teachers, included:

- Sharing learning intentions with the students;
- Using ability grouping to divide class into smaller groups;
- Incorporating more questioning and child input and discussions which direct the learning; and
- Involving the students in decision-making and reflection at the end of the lesson.

In her second interview, Harriet commented that these changes had given the lessons a much more focused approach, with students understanding the learning that is occurring in PE classes, as opposed to just participating. The focus on what was quality teaching had been dominant throughout the course of the PD.

⁵ Teaching Games for Understanding is an approach (also known as the Games Sense approach) where skills are taught, learned and experienced in context. It is a tactical approach to teaching games, that is game dependent and learner centred. It contextualises skills within a game and provides opportunities for students to practice strategic thinking and problem-solving.

Student-centred approach

For Harriet and Hannah there had been a shift from teacher-centred delivery of motor skill learning, to PE lessons that focused on student centred strategies, game understanding and broader interpersonal skills. This new focus relied on taking a TGfU approach to lesson delivery, an approach that Hannah and Harriet, who had been attending the workshops and working exclusively with the adviser to utilise the unit plan examples, had adopted and trialled in their classes.

Harriet suggested that using the TGfU approach had been positive and that she had learnt the importance of “getting the right questions” that enabled the “students thinking about what they are doing in the game, not just doing the game.” This had allowed her to explore social and interpersonal skills with her students through a movement context. It had taken the form of a ‘picking partners’ unit that used tag games as a medium to explore the idea of accepting and being respectful of others. She commented:

My perception was that it wasn't PE, and that they were social skills, but it is the C strand in the document, so it's all part of PE. But I guess I [had] never thought to emphasise and teach those skills as much as I do now. [It has] always been the B strand: teach the skills. [However], without all the other stuff the B strand won't ... work in a games sense. (Harriet, interview two)

Hannah saw the TGfU approach as facilitating learning that occurred in context by “teaching through games rather than teaching a specific skill” (Hannah, interview two). In Hannah’s class, the Year 4 and 5 year students reported playing games for PE. Each term they had focused on a new game: term one - chucky chicken; term two - boofer tag; term three - dribblers and robbers; and term four - bump. They felt that they had to learn how to share, how to add rules to change the game, and how to protect the ball, through playing these games. Hannah’s students commented that they had sport times when they trained for different events such as cross-country or athletics. In these sport times, Hannah also taught the students motor skills that enabled them to participate, for instance, in the high jump.

The introduction of the TGfU approach to teaching enabled Hannah and Harriet to emphasise different learning objectives in their lessons. This had not been adopted by the other teachers, some of whom had only started accessing the PD available at the beginning of term three. Hannah and Harriet had relied on unit plans that had been made available by the adviser for their lessons using TGfU, and had not had the

experience of planning original units. With their desire to continue to adopt this curriculum model for future physical lessons, their ability to plan a unit will prove crucial.

Planning and long-term plan

As early as the initial interview Hannah said that in the future and as a result of this initiative, the school's PE programme would not have interschool events as its focus, but be more games based. Hannah, Harriet and the Principal, with the support of the SSS Adviser, developed a long-term plan for implementation of a new comprehensive PE programme for 2007. This aimed to help all teachers to deliver PE to their classes, especially those whose teaching did not fully reflect the intended outcomes of the professional development on PA, and new teachers to the school.

The focus of the new PE programme [long-term plan] was to move away from the traditional sports-based, motor skill learning focus to a programme that reflects the learning that took place for some of the teachers during 2006. In developing this [long-term plan], Hannah, Harriet and the Principal had reviewed all the school and interschool sports events and incorporated these into the planning of the programme. As Harriet described, the programme was based on a progressive model that would help students to build on skills learnt in previous years. Each unit plan was based on a model that they had explored during the PD. A unit based on these topics/contexts would be written for each syndicate (junior, middle, senior). The programme included two units, different for each year level, one being a *Moving in Context* unit and the other a TGfU unit that would run concurrently during terms two and three. If wet teachers would teach the 'Moving in Context' unit inside, and when it was dry they would be outside teaching the TGfU unit.

During the first term (2007), the focus would be on athletics, and either ABL, or playground games. Athletics would be a more dominant feature in the fourth term. The introduction of a playground games unit and ABL reflected the ideas for teaching PE that were modelled within the cluster workshops. In planning the programme, the School also had the option of planning an extensive aquatic education programme for the beginning of the school year, as they were "lucky enough to still have a school pool" (Hannah, interview two). Teachers would have a term to teach a unit to their students, within the two allocated PE lessons a week. The teachers would also involve their students in other school curricular-based PA, for example, daily fitness and sport.

During her second interview, Harriet recognised that in planning the units for the PE long-term plan, the biggest battle would be to find the resources. While they had access to the 'game sense' cards and resources such as the *KiwiDex Manual* (Hillary Commission, 1992)⁶, finding other resources, suitable for all levels, would be time consuming. There would be a need to achieve a level of understanding among all teachers whereby they could identify games that would work for particular learning intentions.

Harriet and Hannah had developed an understanding of TGfU, but their limited understanding of movement contexts and content will likely limit their ability to make much progress beyond the resources that had been provided for them at the professional development course.

COMPETENCE, MOTIVATION AND CONFIDENCE

Teaching physical education

Harriet and Hannah experienced increased confidence and perceived ability to teach PE as a result of their professional development experience. They had opportunities to reflect on their practice, received feedback and consequently improved their abilities to teach PE in a way that reflected their new knowledge. However, the teachers who had not experienced the same degree of professional development as the lead teachers experienced a drop in confidence in their ability to teach physical education.

The lead teachers were criticised when they presented the 2007 PE long-term plan at a staff meeting. Harriet was not surprised by the criticism and commented that she would expect that from any teacher who did not know how to teach the "new stuff", or was feeling less confident about what the changes would mean for their teaching. Hannah and Harriet had concerns about teachers reverting back to teaching styles and content that they felt more confident with, if detailed and fairly prescriptive lesson plans were not provided for them in the future. Harriet also felt that it would be

⁶The aim of *KiwiDex* is to make enjoyable physical activity available to all children and encourage a commitment to an active lifestyle. *KiwiDex* is an exercise programme particularly suited to primary and intermediate school children and teachers. While emphasising energetic activity, *KiwiDex* promotes the elements of fun, variety, simplicity, enjoyment and involvement for all.

important for her to do some model lessons for, and with, the less confident/able teachers during 2007, to ensure successful implementation of the new PE programme. As an outsider observing the lessons delivered by Kylie and Sarah, it was evident that they felt relaxed about teaching their classes. They both chose developmentally appropriate activities, and lesson intentions, and demonstrated the ability to use questioning to encourage students to reflect on learning.

Offering co-curricular physical activity

The three teachers who completed the second questionnaire, all commented that their confidence and motivation to be involved in co-curricular PA had not changed as a result of the PD they had received. All three had previously been involved in running co-curricular activities and were continuing to do so. Harriet did comment, however, that she could see the difference that extra resources and ideas made to the delivery of co-curricular PA.

There had been some discussion by the teachers on ways they could improve the fitness of students in the school. According to Hannah this had been influenced by the messages about obesity predominant in the media. Hannah, Harriet and the Principal had discussed, in the cluster workshops, the place of fitness within the school curriculum. They were told not to include fitness in the PE programme by the SSS Adviser, "... as it was just PA not PE" (Hannah, interview one). The teachers not attending the workshops did not hear this message and were convinced something needed to be done to improve the fitness of their students. One teacher was motivated to introduce Jump Jam⁷ into the school, and late in 2006 was working towards this. Harriet had taken an alternative view and had removed daily fitness from her classroom programme. She felt that with the changes to the school's timetable, where students spent no longer than one hour in the classroom without a break, it meant that they were getting multiple opportunities to be involved in PA and she did not need to use curriculum time for it. Harriet's students also felt that that they had enough breaks in the school day to be active. They had "lots of time at big break and lunch time" (Ben). Hannah, however, was happy for fitness to be viewed as a component of PA,

⁷ Jump Jam is a resource kit of 'Kidz Aerobix', designed specifically for primary and intermediate school teachers. 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.

and planned to use it more as a management tool, while still delivering two shorter PE lessons each week.

MOVEMENT SKILL DEVELOPMENT

Determining student progress

Monitoring student progress in PE in relation to motor skills had not been a focus of Model 2 within the PD offered during the PAI. For Hannah and Harriet, understanding of monitoring student progress in motor skill development had not shifted, and they therefore continued to use subjective judgements to determine student progress. The use of learning intentions and success criteria did allow them to process student learning with the students.

Evidence of contribution of physical education

The use of PE learning and thinking books allowed Hannah and Harriet to monitor students' progress in PE. The learning books were linked to the learning intentions developed for each PE lesson. Most of the PD the teachers had received during 2006 had focused on broadening teacher concepts of what constitutes PE and consequently the teaching and assessment of developing motor skills was not emphasised. Subsequently the teachers, rather than looking for additional evidence continued to use continue to use checklists, peer and self-assessment to gather subjective evidence of student motor skills. The PD they had received had not focused on gathering evidence of how their teaching contributed to the development of motor skills.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

The SSS Adviser designed units that enabled teachers to direct planning to specific achievement objectives. However, by using these units the teachers at the school had taken less responsibility for ensuring that the achievement objectives were relevant to the level of development of the students.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

Teachers reported that their students enjoy participating in PA, both curricular and co-curricular, both prior to and post the PAI. Hannah commented that she had previously had unmotivated students who were now enjoying the challenges presented within her PE lessons. The changes she had made within her PE lessons had also given some of her students the confidence and motivation to participate in more physical activities during break times. Both Hannah and Harriet commented that by sharing learning intentions with the students, the students had been able to “see a need and reason behind what they were learning” (Harriet, questionnaire two).

The unit Harriet had taught on picking partners and using tag games had allowed her students to develop a range of social skills and positive attitudes towards others. Miranda, one of Harriet’s students commented that she knew what to do when asked to pick a partner, “You just turn around to the person behind you ask them to be your partner ... if they already have a partner; you just ask the next person ...” Harriet felt that her students had become better listeners and were also thinking more about what they did and how that impacted on others, while participating in a unit. She considered them more cooperative participants, but did not think the changes to lessons had made them any less competitive. She was surprised that her students could be respectful to others while still being competitive. Harriet had also recognised the benefit of using a variety of physical activities to develop positive and respectful attitudes, as students had transferred this learning into other aspects of the school day, including when they were expected to work in pairs during maths, and play together in the playground.

A teacher, who has not been involved in the out-of-school PD, commented to the Principal, that students who had been taught through the TGfU model played hockey differently to those who had not. The TGfU taught students to look for space and to create space, compared with other students who continued bunching. Celia, a Year 1 student, explained this concept as looking for “free space” and “run away from other people.” Both Harriet and Hannah, who had trialled the TGfU approach, commented that their students were better at scanning areas, and using judgment while participating in physical activities (in particular games). Harriet had come to realise that her students did not know much about game play, and commented in her second

interview that they were generally egocentric when participating. She felt that the process of helping them to understand the importance of others within games had been slow, but worth persisting with. The changes she had made to her teaching of PE had made her students much better game players.

Parents of students in Hannah's and Harriet's classes understood that their children had been doing activities such as ball skills, athletics, folk dancing, and skipping during PE. More than 25% of the other parents did not know what their children had been doing or learning in PE during the course of the year. One parent commented that her child had not talked about doing PE. Of the parents who identified what learning was happening in PE classes, most recognised that their children had learnt physical skills such as high jump and ball skills. Two parents suggested that their children had learnt cooperation, teamwork and social skills during PE. This possibly indicates a disjunction between what teachers believe they are teaching and what parents understand of the practices in the school.

Student participation in PA had not changed significantly as a result of the PAI. All three teachers who had participated in the PD all year, indicated that most of the students had participated in physical activities both during and after school before the initiative and were continuing with this. Many students were engaged in both school and local sports teams, including rugby, netball and swimming. The teams were coached by both parent and independent coaches. In her second interview, Harriet said that she felt that her students were now more eager and excited about participation, and attributed this to the use of games in her teaching of PE. Her students were also playing some of the games they had learnt in class such as "corner ball, and icicles" (Annie) during break times.

Hannah's students commented that they "mostly" enjoyed PE, but "sometimes people were bossy" particular about having equipment. They recognised that most of the time they were learning about something in PE and sport time, but two of the four students interviewed suggested, that because they could already do "high jump and other stuff" they were not always challenged or learning in PE. The group also recognised that Hannah "doesn't want us learning hard out all the time, so sometimes they just go out and play" and this was when they played the games they had learnt in class for fun reasons, not for learning. However, the students from Hannah's class also commented that there was now less sport during class time than there used to be, as now they

were playing the games they had learnt in PE instead. They wanted to be doing more sport.

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

The majority of parents (77%) indicated that they felt their children had improved their motor skills during the year. However, parents put this down to age, maturity and involvement in teams out of school, “practising these skills in planned activities and during free play at school, weekend sport and playing at home” (parent response). Harriet commented that the focus of the PD had not been on motor skill teaching and learning. She recognised that she had students in her new entrant and Year 1 class with a range of motor skills, including skipping, that they were unable to do. She said in her second interview that some of her students were “weak and feeble... and not that strong,” and that she needed to help them develop their motor skills. The development of motor skills will be a focus in the new PE programme [long-term plan] within the Moving in Context unit.

Professional development and facilitation issues

VARIED OPPORUNITIES

While the lead teachers were thrilled with the progress they had personally made, the Principal expressed concerns about the divisive nature of the PD. The staff meetings had the effect of re-emphasising the divide that had opened up, according to the Principal, and did not essentially contribute to the development of the whole staff.

I don't like the way it has been run, the lead teachers have got all the professional development, and I've got three staff who have felt on the outer, and I don't think that is a good thing. So when we have had staff meetings, with the adviser two of my staff have know exactly what she's talking about and the other three are sort of floundering a bit ... I think everyone should have had the workshops available and it should have been done in school with everyone here. (Principal interview)

Hannah and Harriet felt confident about the direction they are heading and the progress they have personally made. They had experienced “huge growth” but there was no provision had provisions for working with the syndicate, like there had been on the Numeracy contract and this had left other staff in the dark.

I kind of feel the rest of the staff have been left behind a little bit, yeah we have had some staff meetings, but because it hasn't been on-going and constant for them, with someone coming to visit and them being involved in that aspect. I kind of think they are not that much further

forward than they were at the beginning of the year. (Harriet, interview two)

The Principal felt that the differing levels of understandings would have impact on the teachers ability to adopt the long-term plan and their for the sustainability of the professional learning that had taken place for Hannah and Harriet. Also there was a major concern with what would happen if either Hannah or Harriet left. The Principal commented that it would have been a year wasted, as the other staff did not know enough to pick up if one of the lead teachers left.

For Hannah and Harriet, they commented on how much responsibility they had for ensuring the ongoing success and development of particular curricular PA. They expressed concern about 2007, especially considering their was to be a new focus on ICTPD, and two new teachers joining the staff that had not undertaken any additional PD relating to PA.

Even though we are at the end of a journey for some of us, we are going to have to start all over again next year as we are advertising for two new teachers ... if is not going to go dead then we will need to drive it. (Harriet, interview two)

There was some concern, expressed by the Principal, that the advisers did not have the experience or understanding to be able to develop and run a whole school model. Given the focus on quality teaching and the principles that relate to this about inclusive practice etc, it seems that the same message has not been embedded in the delivery of the PD. Teachers are learners and therefore the same principles for teaching and learning should be applied.

THE FOCUS OF THE PROFESSIONAL DEVELOPMENT

Within a one-year PD programme it is not possible to cover all learning contexts or curriculum models that may be used to teach PE. Therefore, it is appropriate that the SSS Advisers select contexts and curriculum teaching models that are accessible for teachers. At Plains School they received PD focused on TGfU, Moving In Context with aspects of playground games, and ABL was also covered. However, there are other curriculum teaching models including Sport Education, the Social Responsibility Model that are also relevant to teaching PE. Plains School's new long-term plan is reflective of the PD they received, and this may be a limiting factor in further long-term programme development. If the endeavour is to have "PE programmes that are regular, balanced, broad, relevant and meaningful, where *Health and Physical Education in the New Zealand Curriculum* is central for the learning and development

of knowledge, skills and attitudes for healthy living” (Ministry of Education and SPARC, 2006) then there is a need for teachers to explore a broader range of curriculum teaching models. Otherwise teachers will be limited by what they have been exposed to, which may be better, but still not broad and encompassing. As happened with Hannah teaching only using TGfU during 2006.

In addition, it is again worth commenting on the lack of involvement by the RST in delivering PD to teachers. With the exception of the very short visit by the Active Schools Facilitator there has been nothing offered by the RST to enhance co-curricular PA within the Plains School community.

Physical activity culture

If we consider that a positive PA culture concerns the school ethos/organisation, curriculum, environment, co-curricular PA programmes and community partnerships, Plains School has enhanced their PA culture almost exclusively by addressing the curriculum through their involvement in the PAI. These impacts have been detailed extensively in prior sections. Other areas of the school’s PA culture have continued in line with the positive approach they had prior to the PAI. Over 60% of parents recognised that Plains School was excellent at encouraging students to be physically active, with the remainder of parents reflecting that the school was good at encouraging students. In particular parents felt that students often had opportunities to be active during class time (100%) and always were able to be active at break times (100%). Student too felt that regardless of weather conditions they could be active at break times. A Year 4 student commented, “as long as we have our coats, we can go outside and play on the courts.”

Plains School continued encouraging and celebrating PA through the running of school wide events, including the REBEL Sport Challenge and school cross-country, swimming and tabloids events. Students were supported to take part in activities, through the allocation of equipment/facilities and the securing of coaching staff. The school worked closely with their community to provide opportunities for students to participate in PA.

In terms of co-curricular PA programmes the school had continued to offer opportunities for students to participate in sports teams and zone/regional interschool events. Parents of students at Plains School were aware of the purchasing of new sports equipment, and what they felt there were more opportunities to participate in

sports including coaching of, tennis, hockey and cricket. While the school had continued to offer the same opportunities to participate in sports teams as they had previously, parents felt that there was more encouragement for engaging in these teams. Harriet's class talked of the teachers cheering them on, while Hannah's students felt that their teacher and other teachers often joined in and encouraged them in physical activities.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

Plains school was aware that to create a positive physical activity culture they needed to ensure that there was:

- Opportunities for student participation at break times and in school-wide events

Including having a range of equipment available that was suitable for all age groups, and facilitating opportunities for students to represent the school in interschool and regional competitions. Plains school also recognised the important role the REBEL KiwiSport challenge had for accessing equipment and nurturing community involvement. The Principal commented that it was important to ensure student had opportunities to engage in PA out of class time, as PA could not be a priority in the classroom, amongst the competing hierarchy of subject.

- Curriculum development

While PA in the classroom was not seen as a priority area, the Principal wanted to ensure that curricular PA, in the form of PE, was delivered regularly and at a high level. While there had been progress in this area during 2006, Hannah, Harriet and the Principal recognised that there was a need to ensure that all teachers had adequate training and professional development to be prepared for and supported the delivery of the new long-term plan.

- Parent involvement and community relationships

In a rural community Plains understood the need to establish links with local community groups and sports teams in order to offer students a range of PA opportunities. Within this the support of the parents was viewed as essential.

- Positive student teacher relationships

Students and parents appreciated teacher support of students in PA both inside and out of the school day.

- Recognition of student achievement

Success and participation recognised in school assemblies through the handing out of certificates contributed students being enthusiastic and motivated to participate. The Principal felt that this process contributed broadly to a positive school culture.

CHANGE PROCESSES AND FUTURE STRATEGIES

As outlined in the PD section above, the process for change was inhibited by changes to staff and the facilitation of the PD where divisions between lead teachers and others became apparent. A major factor in the changes that occurred for Hannah and Harriet was the Principal allowing them extensive release time to attend courses and work with the adviser one on one on site. The Principal had become concerned about the amount of time Hannah in particular had needed to be released from her class to be involved in the PD for the PAI and also be released for her involvement in regional sports group.

The Principal's involvement in the cluster workshops allowed him insight into the expectations for development and the direction that Plains should be heading in relation to curricular PA. This also contributed to his frustration with the PD process and lack of a whole school approach. However, being involved allowed the Principal, in conjunction with Hannah and Harriet to identify some strategies that they intended to employ in 2007 to maintain and enhance the process they had made during the PD of 2006. These strategies included:

- Ongoing PD, provided by both SSS and lead teachers for all staff, particularly new staff to the school; and
- Development of a comprehensive long-term plan for PE, including unit and lesson plans, guidelines for assessment and maintaining evidence.

PLAINS SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Lead teacher development was substantially different from that for other teachers, to the extent that it was divisive.

2. Focus on quality teaching has led to changes in how they teach, but for teachers other than Harriet and Hannah, there has been little change to what they taught.
3. Teachers, including lead teachers, relied heavily on the units developed by the advisers, which potentially limits their ability to plan and teach their own year-long programme.
4. Impact on co-curricular PA was not been evident, and only limited PD had been available in this area.

CASE STUDY TWO: MUD RIVER SCHOOL

Mud River School was a decile 5 full primary school (Years 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, ten of whom completed the initial questionnaire at the start of term 2, 2006, and twelve completed the second questionnaire in term 4, 2006. Of the ten teachers who completed the initial questionnaire, six were over the age of forty-five years and four between twenty-six and thirty-five years of age. Six had spent over fifteen years teaching and four had between one and fifteen years teaching experience. There were no details taken of the teachers who completed the second questionnaire.

Professional development began for most teachers at the beginning of March in 2006, however, some teachers had attended a workshop at the end of 2005.

The Principal was interviewed near the end of 2006. From the teaching staff of twenty-five, three teachers were selected, and consented, to be interviewed and observed (referred to in this case study as Ruby, Walter and Bronwyn). These teachers represented three of the four syndicates operating in the school. Two of these teachers (Ruby and Walter) were also PA lead teachers for their syndicate and were attending the externally run workshops as part of the PAI. Lessons were not observed at this school as on the day of the visit the weather was dubious and the hall was being used for a production (although Jump Jam went ahead in the hall during the day), so teachers had no indoor space and did not deliver PE.

Focus groups interviews with students from Ruby's, Walter's and Bronwyn's classes occurred. Parents of the children from these three classes were also sent a questionnaire to explore their perspectives of PA at their school. The response rate from this questionnaire was only 20%. Walter and Ruby had forgotten to send the survey home prior to the second visit, which resulted in low response rate from these two classes.

The representative from the junior syndicate (referred to as Bronwyn) "didn't want to be involved" when initially asked by the deputy Principal (DP) to contribute to the in-depth data collection, as she wondered if she had anything to offer, but decided that she would be able to present a contrasting view, so finally consented to participate. Bronwyn perceived herself to be 'intermediate' at delivering PA, even though her DP

had selected her because he perceived her to be a beginner. She commented in her questionnaire that she was neither an expert or a fanatic, and that she did not see PE as a priority. Walter, a Year 8 teacher and the lead teacher from the senior syndicate, described himself as an 'expert'. In our first interview, he discussed how he had been a regional representative in his chosen sports, and was competitive by nature. Ruby, a Year 6 teacher, was a less confident lead teacher. She commented on the lack of PD related to PA that she had had both pre-service and in-service, but felt passionate about learning to do new things.

According to the Principal, Mud River School had faced some challenges during 2006. As a new Principal, he explained:

The [school's] focus has been on compliance and micro management, in terms of modifying what teachers were doing in the classroom - ticking off boxes. So there has not been a focus on pedagogy that there needed to have been. So I had come in and started talking about an integrated inquiry approach, which is revolutionary and revelatory for many of the staff. (Principal interview)

On top of this challenge all staff at Mud River School were in the middle year of a three year ICTPD contract. During the first two years of this contract there was a cost to school of \$60,000, which was unbudgeted for. In 2006 the school had to recover this money from within their budget, which had impacted on other spending, such as the cost of relievers, etc. During 2006 the Principal said that the staff had also been involved "in the SPARC contract, the PE contract, had a social studies focus, explored inquiry learning, and developed the school management system." In addition, the year had included a focus on the development of a school vision, mission, and strategic plan.

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

At Mud River each teacher took responsibility for determining when PA occurred with their class. The school had extensive playground facilities for students including: a hall, for use at break times; junior and senior adventure playground areas; and extensive court and field space. Of the ten teachers who completed the initial questionnaire only one was involved in taking co-curricular PA. He did some occasional coaching of sports teams for interschool competition. All teachers identified that they had responsibility to deliver PA as classroom teachers. One teacher commented that she did not have any official responsibility for co-curricular PA,

however, she did feel the need to promote the syndicate sport as a teacher of Year 3 students, as this was the year level where they were introducing sport to the students.

Curricular physical activity

PHYSICAL EDUCATION

Of the ten teachers who responded to the initial questionnaire, eight taught PE once or twice a week, one taught it three or four times a week, and one teacher commented that she rarely taught PE. Five teachers including the teacher that had three to four lessons a week, ran lessons ranging between twenty and forty minutes, three less than twenty minutes, and two for longer than forty minutes. Two teachers included syndicate sport as part of their PE programme, and this occurred once a week for approximately forty minutes.

While a PE overview was discussed within syndicates, for instance: “Remember we have netball coming up, so therefore concentrate on that, which leads to large ball skills,” (Walter, interview one); and an outline of ‘what topics were to be taught when’ was provided, individual teachers took responsibility for determining when PE occurred for their class. There was one teacher in the school that had overall responsibility for PE. The ten teachers who completed the initial survey reported that the following topics were covered during the year, across all year levels: small ball skills (cricket, softball, paddertennis); a large-ball-skills alternative - referred to as ‘winter sports’ (volleyball, soccer, netball, basketball); oval ball - touch, rugby; swimming or aquatics; athletics (discus, shot-put, high/long jump); cross country; and gymnastics. Walter also did unit work or a structured game, once a week, to develop “fine and gross motor skills, agility, vision [reading the game] and [I] encourage students to try their best” (Walter, interview one).

While most topics were taught by the classroom teacher, junior classes were taught gymnastics by a group of Year 7&8 students who had been trained by their classroom teacher to lead learning on a particular gymnastics apparatus, with the teacher taking on a supervisory role. The Year 2 teachers worked collaboratively to teach Māori, music and PE, with one teaching taking responsibility for teaching PE to all three classes. At the Year 2 level all classes were combined, then split into two groups for PE; each group was taken for a 30 minute PE session on two out of three Friday mornings.

Eight of the ten teachers responding to the initial questionnaire commented that their lessons followed the pattern of a warm-up or energiser activity, skill teaching/practices, minor games, and a warm down. The other two teachers reported the inclusion of some evaluation and feedback. All teachers commented on using the *KiwiDex Manuel* and *KiwiSport Fundamental Skills*⁸ (Hillary Commission, 1994) resources to support their teaching. Some made use of video support materials, however, there was limited knowledge about the Curriculum in Action resources.

FITNESS

All teachers responding to the initial questionnaire indicated that they delivered some sort of daily PA, predominantly daily fitness, for about ten to fifteen minutes. Bronwyn commented, in her first interview, that she did not think she was “doing PE that well.” However, she thought her fitness sessions, which she did for twenty minutes every day, that included running, using the adventure playground, doing relays or playing games, were good. She had always done “chunks of aquatics and cross-country but not much else.” Walter’s class had fitness for fifteen minutes, three to four times a week. This was focused on setting a routine and usually included short distance running.

SYNDICATE SPORT

Bronwyn’s class had been involved in syndicate sports where students were taught, and played sports such as hockey, soccer, netball, and athletics. The senior class also had a syndicate sports afternoon once a week that allowed students to participate in a range of sporting activities. Each teacher in the syndicate took responsibility for offering different activities.

Co-curricular physical activity

BREAK TIMES

Teachers reported that during break times students were active. Bronwyn commented that her students used the sandpit, bars and toys that they brought to school. Many of the boys also played chasing games, sometimes with older students. Students had

⁸ SPARC Fundamental Skills Manual - Fundamental skills is about developing children's basic sports skills in a fun way. It uses play and simple activities to help children get involved in games and improve at their own rate.

access to a range of equipment that was distributed by sports shed monitors (usually Year 6 students), including balls, skipping ropes, spades and shovels. The school also had 'Wheels Day' on a Wednesday, when students could bring scooters, skateboards and rollerblades to use in the playground.

In recent years a teacher aide had run a daily lunchtime programme focused on PA. She would facilitate games of indoor hockey, indoor soccer, and basketball, etc, which students from all age groups could participate in. Teachers commented that large numbers of students went to this lunchtime programme.

SCHOOL SPORT

Mud River School ran school-wide sporting events for athletics, cross-country and swimming. Students who performed well were able to compete in local and regional competitions. Walter commented that it was disappointing that they did not have any sports teams that competed against other schools. He was aware that this was an area the new Principal wished to see developed, so there was hope that in 2006 they might get something started.

THE PHYSICAL ACTIVITY INITIATIVE

At Mud River School, it was decided that one person from each syndicate would act as the lead teacher on the PAI, four in total, including Walter and Ruby. They had attended four half-day cluster workshops (although Walter attended only three of the four workshops), and had an adviser come to teach model lessons early in the professional development. The adviser then returned to observe two of their lessons and provide feedback to them. The adviser was not keen to teach a second model lesson with Walter's class, as the students were very disruptive and did not participate, but Walter reported in his second interview that after a "stern talking with the students," the adviser did take another lesson. The lessons with lead teachers' classes were recorded onto a DVD, and discussed with the teacher. The modelling that occurred in staff meetings focused on the practical component of PE, and quality teaching and included activities that exemplified an aspect of this, such as the teaching of ability groupings. Where relief money was available, teachers had been released to observe the model lessons taught by the adviser for the syndicate lead teachers' classes. Most teachers had an opportunity to observe one of these model lessons.

The teachers at Mud River School, who were not lead teachers (n=21), mainly received their professional learning opportunities through a series of four staff meetings held after school. All teachers who completed the second questionnaire (n=12) indicated that the focus of the professional learning opportunities that they had received in 2006 was on curriculum planning and teaching, and had predominantly been provided by someone from the SSS. Across the course of the professional learning, they had explored:

- Being a top teacher, quality teaching;
- Sharing learning intentions;
- Using ability groups to increase inclusion and motivation;
- Unit/lesson plans provided by the SSS Adviser and other people at the external workshops;
- A TGfU approach, with a particular focus on invasion games and strategy development; and
- Communication in their classes, including asking students more questions.

The lead teachers also had opportunities to participate in workshops on Adventure Based Learning (ABL)⁹, and Moving in Context, however, Ruby felt that these sessions had “just been not enough... and hard to get to grips with, especially in a short time.” She said that the Game Sense approach was the best, “the reason it was the best, was because we were quite submerged in that, I think. I was able to take it back and implement it” (Ruby, interview one).

Walter reported, in his second interview, that in such a large school there had been a problem finding the time to take in what he had learnt, the skills of questioning and sharing the objectives, trialling as a lead teacher, and in turn teaching the other teachers from his syndicate, and having them run with it. His solution had been to have a half a dozen of his kids take the other teachers’ classes so that his students

⁹ Adventure based learning is commonly used within outdoor and adventure education. ABL activities are commonly sequenced to include cooperative games, trust building activities, problem solving and decision-making activities. Debriefing and reflection based on these activities is an essential part of the ABL process, as a way to encourage and develop skills in communication, goal setting, leadership, and taking responsibility.

(Year 8) “taught the activities and the questioning process to the other staff and students.”

At the end of term 4, the intention was for the lead teachers to work with the syndicate members to do some syndicate planning. In summary, four of the twenty-five teachers received intensive professional learning opportunities from the SSS Adviser; while the other twenty-one teachers accessed learning at the whole school level during staff meetings, and where possible in syndicates.

The RST delivered one session at the beginning of the year at Mud River School, which was seen by Ruby as an introductory workshop focused on encouraging kids to be active. Subsequently the Trust returned to the school to train ‘sport leaders’. This select group of senior students were trained to deliver sport skills and games to other students, and to facilitate activities at break times in the playground. These students got bandanas, hats and t-shirts to wear so that they would be easily identifiable in the playground. The deputy Principal took responsibility for the selection of students, and no teachers were involved.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

Before the PAI, teachers at Mud River School consistently defined PA as “any form of activity that requires physical movement including daily fitness, PE sessions, sport teaching/learning, also dance and movement, class games, playground games” (Teacher 31, questionnaire one). Three teachers commented that PA included all movements that led to an increase in heart rate and breathing.

However, teachers defined PE in a range of ways, which reflected one, or a combination, of the following perspectives:

- PE promoted the message that looking after ourselves makes us happy and able to achieve learning goals - healthy eating, habits of hand washing, drinking water, getting exercise, fitness, playing with others. Learning about our body’s response to PA;
- PE developed specific locomotive skills in a range of sporting activities, including the use of fine and gross motor skills. Teaching of skills associated

with formalised games, for example, throwing, catching, hitting (small balls, large balls), and athletic skills - aquatic skills; and

- PE involved the teaching of attitudes, fair play, competition and reflection in moving the body in an active way.

Near the end of the PD there was confusion surrounding the difference between PA and PE, best demonstrated by this response in the second questionnaire:

PA is skill based, progressive and discussed. PE is any activity that improves fitness and get the heart rate going, e.g. Jump Jam, warm up, duathlon, athletic sports, etc. It feels as though these are round the wrong way! (Teacher 12, questionnaire two)

The other eleven teachers had come to view PA as movement-based activities that were: less structured, occurring mainly before school, break times and after school; primarily orientated toward managing skills within a competitive situation; involving people getting up and moving whether it is running around or going for a walk.

Their view of PE had moved beyond a predominant focus on teaching movement skills to include the lesson taught in class time, with more structure and direction. As a result of the PD, PE was seen to include the more specific teaching of physical skills, strategies, thinking skills and problem solving; which may or may not be directly transferred to a game. PE had also come to be viewed as a subject that was planned with learning intentions, activities and assessment. One teacher still felt that fitness was an important component of PE.

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

According to Ruby the PD had:

Raised awareness, changed perceptions of what is PE and what isn't, raising of quality and frequency of PE programmes, most particularly with the people directly involved. Am seeing some carry over. Seeing structured PE lessons where skills are being taught and attitudes are being changed. (Ruby, interview two)

The teachers at Mud River School, who completed the second questionnaire, indicated that they had made some inroads into developing a revised understanding, knowledge and skills for teaching PE. All commented on changes to the structure and content of their PE lessons.

Structure of lessons

The PD received did have an impact on the way in which teachers at Mud River School structured their lessons. All twelve teachers who completed the second questionnaire indicated that they had in some way begun to:

- Include the sharing of learning intentions in their lessons, and in some cases the development of success criteria;
- Use less of a teacher-directed approach and allow for more pupil involvement in the direction of the lesson;
- Use more questioning to facilitate discussion, during the lesson; and
- Allow for reflection time at the end of the lesson.

In the second interviews, Ruby said that this had included, “learning the value of talking about why - not just, ‘This is the information, [but] this is what you do with it’.” This was true for Bronwyn as well, who found that “it had 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.” Walter commented:

There’s just so much more communication involved whereby, in the past, we haven’t stopped, talked over points, there hasn’t been the sort of communication going from myself, asking questions, them giving explanations, going back to the game and then stopping again. Initially my kids hated it, absolutely loathed it ... because they were so used to ... “This is what I want you to do. Go away and do it and then we’ll have chat about it after twenty minutes.” ... sort of thing. And that might be the end of the lesson ... you know it might go for forty-five minutes if I have to stop a couple of times but ... they got used to stopping and putting into place strategies on how to make the activity better, how it should flow better, and how it could work for them internally within the game. So ... yeah, good. It’s ... and they’ve got a ... now they know that I will be stopping them from time to time and saying, “Look come in. How can we change this? What should you be doing?” (Walter, interview two)

Impacts on the structure of the lesson occurred for all teachers regardless of their level of involvement in the PD, lead teachers or not. The nature and the content of the PD that Mud River teachers received from the SSS Advisers, which focused strongly on quality teaching, was reflected in the progress that was made in this area. It is also worth noting that such changes, across all teachers, may also have occurred as a result of the school-wide focus on inquiry learning, which encouraged teachers to

move beyond teacher-centred approaches, to adopt and understand the pedagogy of quality teaching. With both an in-school PD focus on quality teaching and inquiry learning, and an external focus, provided by SSS for the PAI, on quality teaching and using questioning (as a core aspect of TGfU), it is not surprising that teachers made progress in this area.

Content of physical education - TGfU and long-term plan

Teachers commented that while the topics that they taught had remained the same, the approach they used had changed as a result of the PD they had experienced. In particular, teachers commented on the use of invasion games¹⁰ as a varied approach and “a key priority” (Teacher 10, questionnaire two). Some teachers saw this as placing “teaching less better” (Teacher 8, questionnaire two), with “less emphasis on teaching skills” (Bronwyn, questionnaire two), and focusing more on children’s problem solving, thinking skills, strategy development and cooperation.

But you know that’s been a real turn around for me, not teaching skills and then applying them to a game. It’s teaching a game and then coming back and saying, “What do we need to be able to play this game better? What rules could we make?” And that’s totally different. (Bronwyn, interview two)

TGfU (also termed ‘Games Sense’ by some teachers at Mud River) was the area of teaching specifically related to PE in which lead teachers had been most “submerged in” (Ruby, interview two) as part of the cluster workshops. This had filtered down to teachers both through the staff meetings, the work that the lead teachers in each syndicate had done with their syndicate team, and the example unit plans that teachers had been given by the SSS Adviser. In addition all teachers had been exposed to a model lesson that focused on fundamental movement patterns, using the Moving in Context series.

The TGfU approach appeared to have become the dominant focus for the way in which the delivery of all PE was perceived. However, how teachers actually interpreted TGfU and the status they gave it was questionable. For example, when Ruby was articulating the vision for the long-term plan developed by herself and three other teachers (including Walter) and the SSS Adviser, she commented:

¹⁰ Invasion Games is one focus area from the TGfU approach. It relates to all sports that require one team to invade another team’s area – e.g. soccer, hockey, and netball.

The four of us with [the adviser] 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. (Ruby, interview two)

TGfU is just one curriculum model through which PE can be delivered. To have TGfU as the underlying feature of an entire two-year programme, demonstrates an incomplete understanding, by both the teachers of Mud River and the adviser, of HPENZC. This was reinforced as Walter, in the second interview, outlined how he had approached PE as a result of the PD:

We were looking at large ball skills, and we were looking at the fact that last term was netball and there was rugby as well as soccer so it [TGfU] lent itself well to that, and I just introduced the invasion games in different ways and incorporated it into the passing, the catching ... all that sort of thing, which I otherwise would have been doing anyway. So it was either a build up toward ... ultimately a modified game of soccer, or netball or whatever we were doing ... so it [TGfU] lent itself pretty well to that.

Interviewer - what happens when you move to athletics, say?

Well there's the... what do they call it?... basically the throwing aspect of it, we just incorporate it in and use it in terms of discus and javelin and things like that. So ... it lends itself alright.

Interviewer - when you say 'incorporated in', what part are you incorporating in?

The action, the slinging action, the... it escapes me to be honest ... I'm grasping at straws here.

Interviewer - Maybe if I rephrase it ... so when you come to do discus, javelin and all those sort of things, I can understand you when you say for rugby, soccer and netball you embed the invasion games mentality, the questioning and all that. When you come to athletics you embed ... the questioning, or the ...?

I mean the questioning process now must go hand in hand. "Why do we have to hold the discus the way we do?" And then you get a range of answers back and then you say, "Well why do we have to stand like this? What's the best way of projecting the discus?" All that sort of thing, so that from time to time you're going to have to stop and bring it back for the questioning.

While it was evident that Walter had used a TGfU approach for the teaching of netball, soccer and rugby (all invasion games), he was not clear about how to approach the teaching of athletics in a different way. What is evident from the long extract above is that Walter understands how to use TGfU for invasion games, and particularly the use

of questioning within this. However, his vocabulary of other aspects of TGfU, or other PE curriculum models is limited to what he has been exposed to in the PD.

Jump Jam has been added into the curriculum programme so that every class was “thrashing away at that ... two or three times a week for fifteen minutes” (Walter, interview two). It appears that they were doing Jump Jam was for the fitness, coordination and dance elements. Teachers were quite happy to do this as it acted as both a management tool and got the students moving. Walter suspected that some teachers saw Jump Jam as PE and but felt that they used it in addition to the PE lesson. While this had had some positive effects, including some students doing this for the interschool competitions, there were some students, particularly the Year 7&8 boys, who saw it as dance and were less than willing to participate.

The junior syndicate “used to do a syndicate sports thing where we had hockey, soccer, netball and we’ve dropped that this year. And I feel that the kids are not being introduced to those sports and yet when they get into [Year] 5 and 6, they’re expected to know those sports” (Bronwyn, interview two). She was concerned about how they would develop the sporting skills, but felt that the lead teacher in her syndicate knew what she was doing.

Where to from here?

The lead teachers (Walter and Ruby) both felt that while there had been progress for all teachers, they were not convinced that everyone was clear about what they had been learning. Ruby felt that many people had “glazed over” when the SSS Adviser had “moved on to other things” when the teachers “hadn’t fully grasped the ideas from the last staff meeting” (Ruby, interview two).

In order to ensure that the initiative did not fall over in 2007, a long-term plan had been developed that was to be implemented across the school. A package would be made available to every teacher that included a detailed programme for Levels 1-4, and unit plans. The lead teachers for each syndicate were developing these unit plans so that they were developmentally appropriate. Across the programme students would focus on:

- Aquatics (Levels 1 - 4);
- Creative Play/Playground Games (Levels 1 - 4);
- Tag/invasion games (Levels 1 - 4);

- Moving in Context (Levels 1 - 4);
- Run, Jump, Throw (Levels 1 - 4);
- Striking and Field (Levels 2 - 4);
- Adventure Based (Levels 2 - 4);
- Skipping, Jump Jam, and Te Reo Kori/Te Ao Kori¹¹ (Levels 1); and
- Sports Studies (Level 4).

In each of these units there were between three and six achievement objectives, from which teachers were going to be expected to select one to address. It would be interesting to investigate, at the end of 2007, which achievement objectives each teacher had selected, and whether they had always chosen B1, for example. There were also some units from under each of these heading that Walter had received at cluster meetings, which could be used and redeveloped as a resource to support teachers.

To support the implementation of the new programme it was decided that there would need to be ongoing professional learning opportunities at staff meetings. Ruby felt that:

If they just give out the pieces of paper, they're going to be filed. We're going to need to follow up with ... or they're gonna read and wonder what it means. Do you know what I mean? We need to have follow up ... this is what it is and this is how you do it and this is where you go to get the stuff. (Ruby, interview two)

Both Ruby and Walter were concerned as to whether the long-term plan was going to be 'enforced' and what management's expectations were going to be. Ruby thought that without clear expectations people would "just carry on doing what they've done." Walter was more hopeful and felt that with the right support, teachers in his syndicate were likely to give it a go, but he wasn't one hundred percent sure.

¹¹ Te reo kori is a term used to identify Māori movement activities as context for learning as part of physical education programmes. While Māori movement activities have been used in New Zealand schools since the 1940s, the 1940s, 50s, and 60s, saw physical education advisers embraced Māori physical activities in their teaching. These activities were given the name te reo kori (the language of movement) in 1989, and development throughout the 1990s incorporated language, cultural values, and tikanga. By 2000, the development of te reo kori had moved beyond these activities to incorporate games and pastimes, local environmental education, dance, and drama. Prominent Māori educator Dr Rangimarie Rose Pere recognised this diversification and recommended that te reo kori become part of te ao kori (the world of movement).

Teaching physical education

Six teachers at Mud River (including Ruby and Bronwyn) said that they felt more confident delivering PE because:

- The new approach and activities had given them a fresh approach and enthusiasm, which also helped motivate children;
- They had some more ideas and resources;
- There had been quality training, that fitted well with the inquiry/thinking approach to teaching that the school was adopted; and
- There was support from all staff.

While Ruby felt more confident about her own understanding and ability to teach PE, she commented:

As lead teacher I could pass it on next year a bit more confidently, but this year [2006] you're finding your own way. So it's very hard, when people ask questions and you say, "Well, I'm not actually sure," or ... it just doesn't sit well with people if you're not a hundred percent sure on what you're doing. (Ruby, interview two)

2006 had allowed Ruby to develop a new skill set for use in her own classroom, but the amount of content she had to deal with from the PD had made it hard for her to come to grips with it all. She felt that she would really like support for another year, especially in relation to developing and implementing the long-term plan as she did not feel completely confident that she knew what to do.

In contrast Bronwyn was feeling more enthusiastic about teaching PE.

When you've been teaching for a while it's sort of in your brain and you know, it's automatic pilot. So I've had to look at these games and think, "Oh what does that mean?" and yeah I have enjoyed the process. (Bronwyn, interview two)

She felt that what she was now delivering allowed students to take charge of their own learning and that made her think she was doing a better job at teaching PE.

One teacher in the second questionnaire commented that she needed more support and ideas, as 2006 had really only begun to improve her confidence. She suggested that there was a need for more of this quality professional learning.

Two other teachers, including Walter, commented that they already had the skills to teach PE prior to the PAI, and therefore did not feel more confident, but appreciated the resources and ideas that had been made available. Walter had always had confidence in his ability, however, there were many non-participants in his PE classes, [add other things you feel were not so good about the lessons observed] which indicates that there was room for improvement in his PE teaching.

Offering co-curricular physical activity

As might be expected, with the predominant focus of the PD for teachers at Mud River being curricular PA, there was little evidence of teachers being more confident or motivated to be involved in co-curricular activities as a result of the PAI. Seven teachers (50% who completed the second questionnaire) reported being more involved in co-curricular activities in coaching, managing and organisation roles. Their involvement had increased in relation to the Principal's encouragement to develop better sporting opportunities for students, and area he was personally interested in.

Walter, with support from other staff and the Principal, worked extensively during 2006 to develop a local interschool competition. As a result there was now soccer, rugby and netball teams competing in a winter competition and cricket, touch and softball teams being organised for the summer terms. This involved mainly senior students competing against three other local schools, and had given the teachers interested in these sports opportunities to take school teams, as opposed to expecting students to participate only in local club teams. However, only one of these teachers reported feeling more confident about being involved, and this was because she had greater knowledge of the sports that she was involved in. This teacher also commented on how good the sports exchange was but noted that it was only for the elite students.

Walter suggested that he had also started to use the questioning skills he had developed through the PD in his coaching. However, whether this was 'questioning' or 'instructing' is contestable.

I suppose I do stop more often and question why we're doing this and how can we better it and that type of thing. Where in the past I haven't. I've told the kids and instructed them. "I want you to play that position and your role is to do this." Where now I might say, "I want you to play this position, it's not a position you usually play on a Saturday, and the reason why I'm playing you there is because I want you to mark this person. He's fast, he's big and you've got good defence. Do you have a problem with that?" (Walter, interview two)

MOVEMENT SKILL DEVELOPMENT

Determining Students' Progress

Monitoring student progress in relation to movement skill development had not been a focus of the PD received by the teachers at Mud River School. Teachers had previously assessed students' movement development using checklists, and with limited movement skill development within the PD they had continued to complete assessment in this way. However, as a result of the exploration of quality teaching, Ruby had started to use a 'thinking book' with the class as a record of assessment. She saw this as "not about skill base so much as the whole picture" and as "one of the only ways we've learnt to assess PE other than what we know." She did add that there was a need for more on assessment in PE.

A thinking book's just like taking photos, or saying what ... getting the children to collaborate the objective, the learning criteria, perhaps taking photos, talking about it, and then coming back in and saying, "This is what we know, and we know this because ...". So it's just a big book really with thoughts and ideas ... and it works quite well 'cos you can go back to it and say, "Well when we did this, this happened ... why? And what did we learn from it and blah, blah, blah." So it just ... for reporting purposes it's quite valuable really. (Ruby, interview two)

While Walter had also had the opportunity to explore thinking books as an alternative form of assessment he still found himself using a 'tick the box' approach.

I do find that because I think it's easier for me to say, "Well yes this child shows a range of abilities." For example they can pass a ball from chest above ... whatever ... sideways. And it's easier to keep stock. And so when it comes to me at the end of the year, I can look at where my ticks are and say, 'Well okay, this kids obviously got good gross motor skills' and that helps. I also have the kids doing their self-assessments ... which I think are important, and peer assessments. So they look at their mates and they ... because they like to compare. At this age ... my Year 8 ... they love being able to say, "Well I did thirty press-ups and you did twenty-five," and then to find out that they're up there ... they're not in the middle of the class. Those things haven't changed for me. (Walter, interview two)

Evidence of contribution of physical education

Teachers at Mud River School continued to use checklists to assess if students could, or could not complete particular motor skills. Some teachers outlined how they used observation and anecdotal notes to keep a record of student progress. With each teacher maintaining their own records, there was no evidence of student progress as a result of PE either within one year, or across their time at the school.

One exception, evident in the data, was Walter, who ran assessments (levels) with his class. There were eight levels which students were measured against, throughout the year. This involved students working on a range of 'fitness activities' including activities such as press-ups, chin-ups, dribbling through cones, and speed/agility tests.

Ruby and two other teachers produced thinking books as evidence of what learning had occurred in PE. Ruby's thinking book evidence was more related to strategic game playing and working well with others, as opposed to movement skill development. Given the design of the new long-term plan, it would be interesting to see what progress Mud River makes in relation to this in 2007.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

It was difficult to find actual evidence of the link between progress in student achievement and levels of development or achievement objectives. The unit plans the lead teachers accessed from the cluster meetings, both those designed by the SSS Advisers, and by the attendees at the workshops, indicated the achievement objectives students should be working towards. However, at this point in their developing understanding of PE, teachers at Mud River School only had evidence of student progress in relation to movement skill development in the form of checklists. The new long-term plan placed expectations on teachers to address at least two achievement objectives each term with their class, so dependent on the expectations placed on staff in 2007, there may then be some evidence of student progress.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

All teachers felt that there had been positive effects on student learning as a result of changes that they had made to their teaching. Teachers commented that the students had:

- Gained skills, confidence and enjoyment towards physical activity;
- Become fitter;
- Become more supportive towards each other, meaning there was better team work; and

- Developed strategic decision-making and problem-solving skills in relation to the playing of games.

Walter commented :

Where once upon a time they [the students] would argue the point because they were adamant they were right and the other person must be wrong, or whatever, now they're not. Now they will actually listen to someone else's suggestion and give the pros and cons to whether it will work or not. So from that point of view it's helped a great deal, you know, 'cos they're now able to communicate ... and are looking at different and deeper thought processes. (Walter, interview two)

Both Walter and Bronwyn's classes discussed how they had learned strategies and teamwork for playing games. They had found this "fun" (Carolyn, Year 8) as they had "worked in small groups instead of the whole class" (Year 8 boy). The Year 3 students commented on how they had learnt strategies to "keep the ball off anyone else," while the Year 8 students had learnt "that you had to call someone's name to get the ball" (Year 8 girl). Leanne's students struggled to recall what they had been learning in physical education in the last few weeks. They noted that they were "doing athletics now instead of physical education" and that they had not done physical education for ages. In athletics they were learning about the different events.

In curricular activities teachers felt that most students were more positive about participating, however, according to Bronwyn, there were still a number of students who were disinterested in particular events, such as cross country and the duathlon, because these were not goal orientated. Teachers commented in the second questionnaire that:

Although some of my students do not like what we're doing, they are now all participating.

Teacher confidence and enthusiasm has meant increased student participation.

Students were more enthusiastic overall and eager to be part of the activities.

Children are keen to try activities again with rule changes and improvement in skills.

Even those who are not naturally skilful could succeed.

Leanne's students had enjoyed the chance to explain and think about what they are doing and to have a say in what happened in the lesson, commenting that by "jazzing up the game ... by changing the rules, the number of players or the size of the pace, the games we play are much more fun" (Year 6 Boy). In her second interview, Leanne

reported that she had found that different strategies for grouping students had increased levels of participation. She had realised that it was acceptable for the “elite to 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. And that works well” (Second Interview). However, Walter continued to have a large number of students who did not participate.

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 ... And even talking with [the adviser], she said the same thing ... some kids just don't want to become involved. So that side of it hasn't altered for me. (Walter, interview two)

The Year 7&8 students interviewed from Walter’s class commented that there were activities they enjoyed and others they hated. The boys were particularly scathing of Jump Jam commenting that it was “not the greatest thing” and you just keep doing the same old thing every time” (Two Year 8 boys), while the girls thought that it was fun “being able to dance and be yourself” (Year 7&8 girls). The girls felt that there was lots of variety and freedom, however, one girl did comment that she only liked it when there were big groups, because then she was less embarrassed when she had to do stupid moves because no one could see her.

While teachers and to some degree students were aware of changes in PE, the parents of Walter’s, Ruby’s and Bronwyn’s classes were not aware of changes to the learning focus of PE. When asked what their children were doing in PE lessons, parents thought that their children did Jump Jam, invasion games (one parent only), duathlon, athletics, sports, gymnastics, tennis, and softball. One parent thought they did body measurements. Nearly a third (31%) of parents were unsure, or did not know what their children did or learnt in PE. In addition, to learning physical skills in the activities outline above as part of the PE programme, individual parents also thought that their children learnt: that sport can be fun and enjoyable; the beat of music (Jump Jam); to join in, to make the most of the opportunities; and that you need to exercise to use energy to keep slim and to have a healthy heart.

In co-curricular activities, teachers felt that there had been no impact on the levels of participation from students at break times. Most students in the junior classes continued to be active and the students themselves thought that they were very active at break times. They played with their peers, using equipment supplied by the school. Each student commented that they played with a friend doing activities such as tag,

sabre-sword fights, on the flying fox, in the sand pit or the just made-up-games on the courts, in the trees around the sandpit.

However, the senior students in Walter's class talked about how they had become less active at break times now they were allowed inside the classroom during break, and also what was 'in' at the moment. This meant that they opted for many sedentary activities, such as Yugioh¹² cards. Some of them felt that they would be more active if they had to be outside. However, this group also had the option of participating in school sports teams, which they were enjoying. This group were aware of a wide range of physical activities that was available to them both during school time and within the wider community that they could access through the school, such as the Kiwi Kids triathlon.

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

Over 85% of parents were aware that their children had made progress with their movement skills during 2006. Only two parents were aware of changes made in PE programmes during 2006, while over 40% of parents were aware of the introduction of Jump Jam. Parents felt that the key factors behind their children's development were:

- A general improvement due to age and ability;
- Starting to do sport outside of school time, e.g. soccer, golf, biking;
- A result of participation in activities at breaks times; and
- Encouragement from home and more activities with the family such as biking, running and swimming.

Teachers were not aware of any change in students' movement skills in extra-curricular activities as a result of changes that had been made in their programme. As the professional development had not specifically focused on the development of movement skills, this finding is not surprising.

¹² Yugioh cards are part of a card trading game.

Professional development and facilitation issues

IN-SCHOOL DELIVERY

All teachers commented on how they had found some value in the PD, particularly relating to:

- Getting new ideas/activities/ games to teach their students;
- Having lesson plans and unit plans to work from, even though they did not always match the current long-term plan; and
- Having a chance to watch model lessons that they could then run with their class.

For the lead teachers to be videoed and watch themselves teach had also proved useful/insightful. The feedback they had received from the adviser had been “constructive, without any forms of criticism” (Walter, interview two). For both Walter and Leanne it had taken the form of ‘Did you see that child doing that? Isn’t that interesting,’ which had given them much to think about. While their lessons were videoed other teachers from the syndicate were able to come and observe. Ruby felt that watching these model lessons had helped other teachers, but she was not sure that teachers practice would change.

The have gone away with these great ideas and tried the things that they’ve seen and then probably just left it at that I would think. They love ... they see the practicality of it with the inquiry approach and where our school’s heading, but it’s still easy to go back to what you know, I think, at this stage. (Ruby, interview two)

CLUSTER WORKSHOPS

The lead teachers were not so positive about the nature of the cluster workshops. One lead teacher commented, “I have felt that at times we have been guinea pigs and that the facilitators are struggling as to the best way to present their information” (Teacher 21, questionnaire two). Walter’s comment best captures his own and the other lead teachers experiences of the cluster meetings.

The workshops were really condensed. Half a day where we just crammed in so many things and then were given a piece of paper at the end saying, ‘We’ve covered all these ... so don’t think that you have to write notes or worry about that’. But it was so condensed and we still haven’t covered it really in depth. The understanding’s still not there with a lot of people because of the nature of the whole thing. It’s just been rushed and there’s so much to cover, you know? ... And then to

come away and then try and tell someone else, 'This is what we did' ... and they're standing there bombarded ... like we were ... and it's not her [the advisers] fault ... but that's the way it is. It can be a little off-putting, and ... too hard basket can come into play. (Walter, interview two)

WHAT MODEL WORKS BEST IN A SCHOOL THIS SIZE?

In a school of this size, with twenty-five classroom teachers, there was consent among the lead teachers that the whole school had not had more opportunities for PD. One teacher commented, "It appears that the lead teachers did far more work and had far more opportunities than we did. Maybe they got more out of it" (Teacher 11, questionnaire two). Ruby and Walter both commented that the 'lead teacher model' had not really worked for them. They felt that only four teachers received in-depth PD, while the others only got "bits and pieces." Ruby suggested that:

The PD's been good, but just when we've started getting our heads around it ... like the first few sessions you're ... they're talking about things we didn't know anything about and it's all starting to click into place now. One years just not enough to get a whole school on board, and next year we'll have something else come up and it will just be (pause) it will be those that are really keen will do it, and those that won't [aren't] will go back to their old ways. (Ruby, interview two)

Both Ruby and Walter thought that even though they had had more opportunities than the other teachers in their syndicate, they still were only just coming to understand everything that they had been exposed to as part of the PD.

Another lead teacher agreed that it should have taken place over two years, as there had been a "huge amount of paper work to sift through – some unnecessary – and many new terms and ideas to learn and try to pass on to my syndicate" (Teacher 21, questionnaire two). While the only other lead teacher commented that she needed "time to assimilate all the new ideas and language so I can sort it out efficiently to pass on to syndicate members" (Teacher 12, questionnaire two).

As indicated earlier, Walter had struggled to find time to work with his syndicate to model lessons. So instead, he had trained his students to deliver activities and questioning process to the other classes.

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. ... I think if you plucked someone

out of their class and said, 'Hey, how have you found it?' they'd probably say, ' Well I don't know a great deal about it'. To be honest, I think that's what they'd say. ... 'But it was good when Murray or his kids, took our kids and demonstrated' ... but whether it followed on from there or not I don't know. I really don't. (Walter, interview two)

The way in which Mud River School opted to, in conjunction with the SSS Adviser, set up lead teachers in each syndicate has placed enormous pressure on this people. With only one year to come to understand a raft of new knowledge and skills relating to PA, and then pass it on to the others in the syndicate is a lot to expect. The expectation of other teachers was articulated by Bronwyn when she suggested that the lead teacher from her syndicate should come back and feed it information to everybody else, and drive the next phase of syndicate planning, as the syndicate leader has "had all the input" and knows what she is doing (interview two).

This teacher summed it up best:

*If this is serious, all teachers need the chance to take part in everything.
(Teacher 15, questionnaire two)*

Physical activity culture

Throughout the interviews it was not clear that teachers, or the principal, had developed an understanding of 'school physical activity culture' as it is defined in the Ministry of Education & SPARC (2006, in draft) document, *Physical Activity Culture in Schools*. However, the principal and teachers, including Ruby and Walter, valued the role PA played in the school community.

There were changes to curriculum PA resulting from the PD offered within the PAI. However, as these changes were not reflected within the entire teaching staff then it is not possible to conclude that they have had an impact on Mud River's PA culture. There have been impacts for individual teachers and their students, but these are not reflected in the parent understanding of what was occurring in PE, and there is no evidence to demonstrate how these have affected the PA culture.

The only additional impact, linked to the PAI, resulted from the involvement of the RST in the training of students as sports leaders. However, the introduction of these sports leaders was reported by teachers to have had little impact of students' physical activity a break times. Both Ruby and Walter commented that they were not aware of who the sports leaders were, and had not seen them playing an obvious role in the playground.

None of the students interviewed were conscious of who these leaders were or what role these students played in the school. It would appear that the sports leaders had little impact on the PA culture at Mud River.

There have been other changes at Mud River that contribute to a positive PA culture, however, links between these changes and the PD cannot be substantiated. Additional areas of change include:

- The development of an interschool sports competition, where Year 5, 6, 7 and 8 students have the opportunity to compete against four other local schools; and
- The introduction of Jump Jam into the school programme. Every class was involved in this two or three times a week. One teacher, with an interest in aerobics had completed training in this area and then had a fitness timetable for the whole school. The introduction of Jump Jam was the change in school practice that the most (over 60%) parents commented on.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

Mud River has shown a commitment to PA during 2006, through the introduction of Jump Jam and the development of an interschool sports competition for senior students. There is less evidence to suggest that curriculum PA, in the form of PE, is a high priority presently in the school. Work on this would assist in creating a positive PA culture. Mud River had identified the need for consideration of the following factors in order to enhance the PA culture within the school, including:

- Continued PD available for all teachers in relation to PE. It was expected that lead teachers would take responsibility for this in their syndicates, and SSS would be used to support this. There was some feeling that all teachers should be exposed to the same intensive level of PD as the lead teachers had experienced in 2006;
- An ongoing review of PE, as part of the broader strategic-planning process where all curriculum areas are reviewed within a three-year cycle. This process would be lead by the senior management as the Principal was aware that “it is up to us, to make sure that it doesn’t die.” He suggested that it be a primary focus this year, secondary focus next year, and review focus in third year; and

- Continued development of co-curricular sporting opportunities for students.

While Mud River is interested in enhancing and increasing PA for all students, they are also conscious of student safety. In what seems to be a contradiction to a message about increasing PA, Mud River is redeveloping the entry areas to the school so that they can accommodate parents dropping children at school in motor vehicles, as opposed to encouraging active transport.

CHANGE PROCESSES AND FUTURE STRATEGIES

At Mud River there was an inconsistency between the goals that might relate to a positive PA culture and the communication and implementation of such goals. Some of the technical matters that you would need in order to identify school and community factors have been carried out but the communication systems to implement these factors seem to be lacking, for example, the Principal has had little communication with teachers about implementation, or with parents about the schools goals. Consequently parents may well have had goodwill towards the programme but did not have enough detail about it to be in a position to be able to support and help their children.

Mud River was undergoing a period of extensive change during 2006. There was a new Principal that was charged with, and desired to see, some significant changes in the school during his first year. Mud River had signed up to the PAI prior to the Principal taking up his role. The priorities that the Principal set for 2006 did not include the PAI as a high priority. This is likely to have had the biggest impact on the outcomes of the PAI at Mud River. However, the Principal's determination to develop inquiry learning as part of teacher practices, aligned with the PD in relation to the sharing of learning intentions and the use of questioning during PE lessons, has proved to be the most influential aspect of the PD. In an effort to enhance the developments relating to PA that were seen during 2006, teachers commented that they need more on-going support in the form of:

- More contact time with the adviser, as a non-lead teacher;
- Ideas for units and a variety of activities that can be used both inside and outside the classroom, including resources/ideas in the TGfU area, and more practical demonstrations;
- Information to access within our school, e.g. book resources and useful websites;

- Feedback from trained PE professionals about individual lessons and school-wide programmes, i.e. this is what, as a school, you are doing well and this is what you could do to improve;
- The opportunity to ‘take time out’ of the classroom and to share more of the workshop concepts at length with fellow syndicate members (Walter and another lead teacher); and
- More support for school sport, in the form of coaches and managers, accessed from within the teaching staff and wider community.

MUD RIVER SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Other school priorities and PD commitments appear to have influenced the amount of time available for teachers to give to the PAI;
2. Structure of the PD model placed responsibility on lead teachers from each syndicate, for delivery of PD to other staff, this appears to have made it difficult and onerous on the lead teachers;
3. With such a large staff, it was apparent that the adviser had difficulty in working with all staff. A school of this size would have benefited from more time.
4. Limited RST involvement resulted in few impacts on co-curricular PA, or strengthening community partnerships.

CASE STUDY THREE: STEEPHILL SCHOOL

Steephill School 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. Two of the three teachers who were over the age of 45 years, identified as having had over 15 years teaching experience, and at the other end of the spectrum was a third year teacher who was under the age of 25.

Three teachers completed both the initial and second questionnaire, two additional teachers also completed the second questionnaire, including two teachers that consented to be involved in the interviews and classroom observations. One of these was the lead teacher for the PAI, referred to as Sam. Sam was a third year teacher who had responsibility for sport coordination in the school, but was not the health and physical education portfolio holder for the school. She taught Year 1, 2, and 3 students and felt that she had good general knowledge about PA, was confident delivering it, but did not always feel highly skilled at teaching the PE programme. The other teacher involved in the interviews and observations was Culhane, who was over 60 years of age and had a health condition that limited her ability to engage in PA. Culhane taught Year 3-5 students, and had been teaching for over fifteen years. While Culhane had extensive experiences participating in PA both competitively and for social reasons, in the initial interview she said that she felt less able to teach PA due to her health reasons and therefore opted to have others take her class for PE whenever possible. Culhane did offer daily fitness to her class, and frequently took the students outside for a game. Culhane had hoped that the PAI would mean that specialists would be brought in to take her class for PE and she would not have to teach it. The third teacher, who completed both questionnaires, was a teaching DP, who taught New Entrants and Year 1. The Principal was also interviewed during the second round of data collection.

Focus groups of students from Culhane and Sam's classes were interviewed after their class had been observed participating in a PE lesson, during the second visit. Over three quarters (78%) of the parents who received a questionnaire from Sam or Culhane responded.

While Sam was a recent teacher education graduate, the other two respondents to the first teacher questionnaire both did their training in the 1960s, along with the Principal. Sam's training had involved the 1999 curriculum, and how to plan for PE. Culhane and the other experienced teacher who responded could not remember receiving any PD in relation to HPENZC. Culhane commented:

We would have done the health side of it but not phys ed... Which strand is phys Ed? B? ... there is one strand that is the phys ed, isn't there? There is one about relationships, and there is one about physical education, but I don't know. (Culhane, interview one)

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

Steephill School was situated on a small site with concrete-only playground areas allocated for junior and seniors. There was also an adventure playground for juniors, and a small hall. The school also had the opportunity to use the local park area up the hill. This included a playground, skate board ramps, and a large grassed area. Students were not allowed to access this local park during school time without adult supervision.

Sam commented, in the initial interview, that she felt the school had been under-resourced in terms of equipment for PE lessons and for students to use at break times. She was unaware until recently that she had access to a \$500 budget to purchase new equipment. So, as sports coordinator, she had gained a \$3000 grant from a local organisation, which had allowed her to purchase new playground equipment (balls, etc.) that had enhanced what was available to the students and to teachers for PE.

Curricular physical activity

FITNESS

During 2005, the Principal of Steephill School instigated fitness tests that were to be repeated in 2006, which would allow teachers to monitor the overall fitness levels of the students. He had identified a decreasing fitness level amongst his students in recent years, in terms of flexibility, strength and endurance. The Principal had "been taking PE lessons for 35 plus years, the test has been used for fitness with Year 7&8 students for about the last 15 years" (Principal interview). He reported that students walked everywhere when he first started administering it, but now he had found that they "get dropped everywhere" and as a result fitness levels were declining. To counter his concerns the Principal, in conjunction with the BOT, had:

- Encouraged teaching staff to focus on a revised fitness programme, to enhance student fitness levels;
- Brought in rules about nutrition, and what could be eaten at school; and
- Employed a person to come in, two – three times a week, and organise physical activity opportunities for students during lunch breaks at the local park adjacent to the school.

The Principal did not see it as the school responsibility to deal with students' PA patterns outside of school time, but had been supportive of moves to make the Walking Bus¹³ a more common method of travelling to school.

With support and encouragement from the Principal, the three teachers surveyed were taking their classes for 15 to 20 minute fitness sessions each day. This was timetabled into the school programme, and included Jump Rope for Heart (JRFH)¹⁴, stations, games from *KiwiDex*, and Jump Jam. In her initial interview, Sam suggested that fitness time was used to burn energy, calm students down, increase concentration for other things, and for the junior school, provide options for activities and games they could play at breaks. The two more experienced teachers both commented that they knew the benefits of being fit, and were aware of the societal problems that a lack of fitness in communities can cause, and so by doing daily fitness they hoped to address this concern.

PHYSICAL EDUCATION

In addition to fitness, individual teachers chose when they did PE and how long it lasted.

PE has taken a back seat for me, but I do try and take one game a week ... I have not taken a phys ed lesson. (Culhane, interview one)

Culhane's training had focused solely on fitness and she had found herself using *Physical Education: Infant Division Handbook* (Department of Education, 1962) that she received while training, as a major resource. In addition, she had sourced

¹³ A Walking Bus is just like a normal bus - but on foot. It takes the same route to school every day and picks the kids up along the way. It even has a 'driver' at the front and a 'conductor' at the back who are specially trained parents.

¹⁴ Jump Rope for Heart is a National Heart Foundation initiative that promotes the importance of physical activity and healthy lifestyles to primary and intermediate-aged students, as participate in age-appropriate skipping and movement skills.

KiwiSport books (swimming) and found some other resources. Culhane, did not really teach PE, and had previously had the Principal take it during her release time. Culhane outlined how her class had PE in blocks, some of which she delivered, for example, swimming. Swimming happened during the first six weeks, and the students were taught the strokes. In her initial interview, Culhane commented that once swimming was over “if they don’t get anymore [PE], it doesn’t really matter to me.” Her class did get gymnastics. In previous years the Principal had run this for the whole school, but in 2005 and 2006, the entire school had been bussed to a local gymnastics centre, where outside experts had delivered the gymnastics lessons.

Sam’s PE was run very differently from Culhane’s. With her Year 1-3 students, Sam provided one or two lessons of PE a week that generally lasted for 20 to 40 minutes. At the time of the first visit, her teaching had already been influenced by attendance at a sports coordinators’ resource day in 2005 (detailed later in the case study). Her lessons focused on the development of fundamental skills such as, striking, balance, rotation, jumping and catching, and had included work on invasion games and aquatics. Sam had begun to share learning intentions with her class and to make sure they knew what she was looking for. She had already begun to question the importance of daily fitness and commented that it was not mentioned in HPENZC.

Sam commented, in the initial questionnaire, that PE was poorly taught at the school, and that this had made her want to improve student attitudes towards PE. She was frustrated that the programme was undefined, so individual teachers created their own long-term plans as there was nothing clear from the school. As a third-year teacher, she felt that she maybe did not have enough influence to bring about change. As an example, Sam commented on how she was the lead teacher on the PAI, but did not have the management unit or responsibility for PE in the school, therefore limiting what she could do in terms of resourcing or implementing changes.

The other teacher who completed the initial questionnaire offered regular PE to her New Entrant/Year 1 class, one or two times a week for less than twenty minutes. She included in her programme: swimming; large and small ball skills; Run, Jump, Throw; and tabloid games. In the initial questionnaire she commented on how she was “old enough to have been part of ‘drill’, and really like the ‘stations’ type PE lessons.” All three teachers had the same formula for the development of a PE lesson; this involved a warm-up, skill teaching, a game, and a warm-down. Sam had started to build in a reflection phase as a result of her learning in 2005.

Co-curricular physical activity

BREAK TIMES

The three teachers surveyed all commented on how active the students were during break times. In addition to student involvement in the organised activities at the local park, two to three times a week, students could ride scooters and rollerblades at break times. While “some parents are put off by only having concrete playgrounds” (Principal interview), the students found it “wonderful” because they could go out even after heavy rain, where as the grass areas would have been out of bounds. Culhane and Sam both commented, in their initial interview, on how the students were active at break times. The juniors made use of the adventure playgrounds and sandpit areas, and also accessed sports equipment that was available to them. The senior students played games, used the sports equipment and rode their scooters. None of the teachers expressed concern about low levels of activity from their students at break times.

SYNDICATE SPORT

Culhane’s and Rachel’s classes, as part of the senior school, also had one afternoon a week for syndicate sport. This sometimes involved other local schools. However, when they combined with other schools, Culhane made a comment in her initial interview that only the elite sports players practiced, and the other students “do other things based at the school,” which may or may not have included PA. The Year 5, 6, 7 and 8 students had had an opportunity, funded by the school, to go to the Action Sports Centre and have a day trying six different sports, from tenpin bowling, to indoor netball.

ADDITIONAL

In addition to teacher or school-led activities, the school was well supported by the local netball rugby clubs, with many students involved in the local teams, and the clubs coming to and involving themselves in the school. An Out of School Care and

Recreation (OSCAR)¹⁵ programme was run in the hall after school, and this provided other opportunities for students to be active.

THE PHYSICAL ACTIVITY INITIATIVE

In the latter part of 2005, Sam attended a sports coordinators' day, run by the RST in conjunction with SSS, at which an outline of all the contracts that were available for 2006 were discussed. Sam also came away with new ideas about groups she could book, for example, Ripper Rugby, to run some supplementary PA sessions at Steephill School. It also inspired her to get the sports shed organised. As a result of this day the school signed up for both Active Schools Initiative and the PAI, which Sam viewed as different projects. Sam therefore became lead teacher for both initiatives.

Sam, as lead teacher on the PAI had been the only teacher from Steephill School to attend the cluster workshops run by SSS. Sam reported, in her second interview, that she had been to five cluster workshops, had lessons modelled with her class by the adviser, team-taught with the adviser, been observed teaching her class, received feedback and a video of her teaching. One other teacher (referred to in this case study as Rachel) joined in and attended the last workshop in term three. This had provided Sam with some support and an enthusiastic person to work through the learning with, however, as this second teacher had only just become engaged in the out-of-school workshops, it was difficult for her to capture the full intent of the PAI.

Four out of the other five teaching staff had been involved in staff meetings run by the adviser. The teachers at Steephill School reported that the major focus of the professional learning opportunities they had received this year were based around planning and teaching. There had been a focus on developing an understanding of sharing learning intentions, using questioning techniques to increase student engaging, and using a TGfU approach.

Every teacher has had the adviser come out and model a game from the games for understanding aspect and model questioning, and model sharing the learning intention. (Sam, interview two)

¹⁵ OSCAR - Out of School Care and Recreation Programmes are before school, after school and school holiday programmes for children age 5 to 13. OSCAR programmes are recreation based and they aim to meet the needs of children in their out of school hours in a safe and fun way.

When the SSS Adviser came in to take Culhane's class, Culhane was on release that day, and so did not get to see much of the lesson. Her model lesson ran inside and focused on what could be done with a hula-hoop, with the students' peer assessing.

Sam, also attended the Active Schools Toolkit training, and received the "free red bag, full of gear." She had passed the toolkit on to the Chair of the BOT as a starting point, and felt that the CD was more useful for the seniors than for her junior student. In her initial interview she said that she intended to create copies of the cards and the Outdoor Education resource for every teacher, in order to "try and get other teachers excited."

There were no direct professional learning opportunities provided by the Active School Facilitators or other RST educational personnel, however, the school did have people in from basketball, hockey, Ripper Rugby (two visits), and Aussie Kick come in and take the students for skills. These opportunities have focused on up-skilling students across a variety of activities, while the teachers took supervisory roles.

The Principal commented that there was an initiative, he did not know which one, that suggested that schools contact local businesses and get people to come in and take activities. The idea was that local employers pay for their staff to come and work with Steephill students. This was not an initiative that the school wanted to buy into, as they already felt that they got "a lot of support from local businesses in other ways, so to ask them to pay their staff to come and spend time here was not a goer" (Principal interview).

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

Prior to the PAI, the teachers at Steephill School conceived PA to be about being active on a regular basis through play, games, sport and recreational activities, while PE involved the teaching of skills [physical and team] and sportsmanship.

By the completion of the initiative, PA was viewed by all five teachers as whole-school opportunities for the body to be active, however, there was not a consensus on what constituted PE. PE was defined by those who had not been to cluster workshops as: focusing on developing knowledge of an idea, skill, game for future use; teaching of

how to use the body effectively and to the best of its ability; and the teaching of skills. Culhane sustained the view that PA is moving and movements, while PE is solely about the teaching of motor skills.

The two teachers, including Sam, who had been to cluster workshops included focusing on learning intentions as part of PE, and had moved to view PE more broadly. For Sam her conceptual shift related most to her understanding of how to teach PE, using TGfU as a curriculum model. This allowed her to view PE as more than physical skills, and to see it as including problem solving, discussion, development of social skills and game strategy. Sam who had attended all the cluster meetings and had received the most PD, experienced a re-conceptualisation of PE, but recognised that she was struggled to get other staff to recognise difference.

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

Curriculum time continues to be used for fitness, sport, games, and in some instances, PE based on HPENZC. Across the five teachers, the impacts of the PAI varied, with a significant difference between the gains made by Sam, as lead teacher, and the other teaching staff. In particular, it is worth noting that Culhane, had opted to swap her teaching of PE with another teacher (Rachel), and teach music instead. During her second interview, Culhane said that she felt that PE had changed quite a bit in her time teaching. She had previously been able to do drill exercises and students did as they were asked. Now “children just don’t stand there and do what you tell them.” This had forced her to take bigger steps between progressions, just to keep the children interested. According to Culhane, Rachel was “into sport, younger, more capable and confident” in teaching PE, and therefore could cater to the students needs better than Culhane. As a result, Culhane had not taken been involved in trailing anything new with her class. The decision to opt out of teaching PE inhibited her ability to develop new knowledge, understanding and skills associated with teaching PE. The only aspect of learning that had taken place for Culhane was in relation to the structure of the lessons (fitness, games) that she did take.

Lesson structure

The only common impact experienced by all five teachers was the development of an alternative model for presenting lessons. While previously lessons consisted of warm-up, skill teaching, game, warm down, all teachers now included the identification of learning intentions at the beginning of each lesson. Rachel explained in the second

questionnaire, that teachers had got into the habit of using “a card with the aim of the lesson for the children to see, focus on and reflect on.” The school had previously focused on quality teaching through their involvement in other initiatives including the Numeracy contract, and so while the use of learning intentions was new in PE, teachers had previously been using them in other curriculum areas. The introduction of learning intentions in PE lessons had also resulted in Sam changing the way that she assessed her students. She had previously used checklists to mark off if students could complete certain skills, now she worked with the students using Plus, Minus, Interesting (PMI)¹⁶, so they could either peer or self assess against the learning intentions. This form of assessment had not filtered into other parts of the school, and it had not been addressed in the PD, so Sam was unclear as to how to deal with assessment in PE.

Impacts on other teachers

For the teachers in the school who had not attended cluster meetings and not had the extensive PD that Sam had had, there were few identifiable impacts on their knowledge, understanding and skills in PE. Included in this group is Rachel, who having attended only one cluster workshop, felt that she had only just “come on board with the developments.” As a result, she had not made significant changes to her teaching. The one lesson that Culhane had seen modelled, based around using a hoop indoors, had made her reflect on different ways she could have her students get her students to peer and self assess motor skills. It had also provided her with an opportunity to consider how she could still run PE in the classroom. However, having seen this lesson taken mid year, Culhane had not tried to deliver a similar lesson, or had she been encouraged to run PE in wet weather, even if Rachel was taking it. This meant that, if it rained, there was no PE, only Jump Jam as it could be taken in the hall.

One of the options that the teachers had considered and dabbled in included using invasion games. Of everything that they were introduced to, invasion games, caught their attention the most. Three teachers, other than Sam, trialled invasion games with their classes, using the unit plan provided by the SSS Adviser. One of the more

¹⁶ Plus, Minus, Interesting is a lateral and creative thinking strategy used in de Bono’s CoRT Thinking program.

experienced teachers reported, in the second questionnaire, that she had taken to “using new ideas in games” to encourage her new entrants to explore moving safely while playing games, and had found this worked well with students.

With the exception of this change, and the inclusion of lesson intentions, there is no evidence to suggest there were other alterations to the teaching of PE by these other teachers. In the senior school, in particular, they continued to offer the same programme as they had previous years. That being: fitness, aquatics, cross-country, gymnastics, winter sports, JRFH, athletics and swimming. During her second interview, Sam said she had observed other classes continuing to do fitness, so had provided teachers with articles to read, on the purpose of fitness, and whether fitness was “meaningful or meaning less.” She felt that these readings had possibly challenged thinking for those who had read them, but did not think it had challenged thinking enough to change practices.

Impacts on lead teacher

The focus of learning for Sam had been on “curriculum as in implementing it, changing the planning so that it is more meaningful, changing assessment is so meaningful.” She had made a range of changes to her PE practice as a result of the PD including:

- Moving beyond teaching of motor skills through drills, using a TGfU approach;
- Incorporation of extensive use of questioning; and
- Exploring ways of developing the whole child through PE.

Sam felt that 2006 was a transitional year for her and her class, where she had been experimenting with different approaches, such as TGfU and ABL, and next year she would develop a programme for her class. Throughout the year she had been taking parts from each of the units they had focused on during cluster meetings, and trialling these aspects with her class. By the end of 2006, she was clearer about each of the different approaches, but had not settled on a long-term programme for 2007. TGfU had been the most detailed model explained to Sam during the course of her PD, and therefore made the most sense. As part of a TGfU approach, questioning is essential. Having developed her questioning techniques while experimenting with TGfU, Sam had transferred this skill into all areas of teaching PE. She felt that this gave the students much more ownership of the learning, lesson or game. Sam had also taken

fitness out of her programme, with the exception of whole-school fitness on a Friday, as she saw it as irrelevant.

I've dropped fitness from my timetable, I see it as pointless the children are active on the way to school and during breaks and what's the learning in fitness ... quality PE is where I am with that in my timetable ... my mindset changed ... (Sam, interview two)

When asked how she felt about her teaching of PE previously and then after the PD, Sam commented:

What we did was quite boring, boring teaching. And if you are bored teaching it the kids will pick up on that. Its easy teaching, its easy to get your class set of equipment and set up your cones, do drills and then open your book and see how to play the game, and this is what we are doing. And then you can't do it, so you just go and sit over there, you know never mind. OK your tired you sit over there too, and you can't catch you might get picked last on the team, it s not doing much for the self-esteem. Where as with these games they have the ownership of what's working ... I see it on the playground ... students speaking up when their wee games aren't working, and coming up with suggestions, like we do in the PE situation. (Sam, interview two)

She indicated that her preference was to continue to develop her teaching of PE and her understanding of it, in order to ensure she did not revert to the 'boring' teaching she had previously been doing. With the PD coming to an end she was concerned that there was to be only limited support available in 2007, as she felt she had only really been experimenting and would need help to get everyone in the school to adopt the new idea.

COMPETENCE, MOTIVATION AND CONFIDENCE

Teaching physical education

Following the PAI, Culhane felt no more able and no more confident in delivering PE, and this was reflected in her not taking PE with her class. She said, in the second questionnaire, that she had "great expectations to do more" during 2006, but her age and health status had implications which impacted on this. Culhane reflected on how much more confident Rachel had become as a result of attending one cluster workshop. Rachel commented in the second questionnaire that she was feeling "more confident personally" and felt that with extra PD she would continue to develop. Interestingly, while she was feeling more confident, the programme that she delivered was still reflective of the topic/sports/fitness based programme that had previously been dominant in the school.

Alternatively, Sam felt much more confident in her ability to teach PE. She found that she was more motivated by the changes she had made and the progress her students had made, especially in relation to tag games. However, within the course of the questioning she expressed hesitation about what the parents/Principal thought she was doing. She surmised that the parents would be used to seeing “traditional PE, with drills and skill” and wondered “do they see me out doing a game as a fill in or do they see me out doing quality PE with questions?” While she felt confident that they were learning, she was concerned that the parents, and the Principal to a lesser extent, might think that she was out there playing games, or doing a “ten-minute filler,” when in actual fact the students were learning. This was beginning to impinge on her confidence, and together with a lack of support from other teachers who were not adopting alternative teaching models, there could be a longer-term impact on Sam’s ability to sustain her confidence, motivation and ability to deliver a different model of PE.

Offering co-curricular physical activity

The Principal’s strong encouragement to develop students’ fitness helped to motivate teachers to provide a range of opportunities for students to be physical active. These opportunities predominately occurred during class time and were included as part of the curriculum programme. Rachel, who had previously been an aerobics instructor, had completed the training for the Jump Jam programme and had introduced it to the whole school. She led the school every Friday morning through a series of routines, and also ran fitness (including Jump Jam, relays, shuttles or skipping) for the senior classes, approximately sixty students, every other morning.

Sam had been motivated by the PAI to bring in outside groups to deliver PA opportunities to all students. She had brought in people to take one or two sessions for particular sports (Ripper Rugby, tennis, etc.). While she saw this as co-curricular PA opportunities, as they were not linked to the curriculum units she was delivering, she recognised that other staff saw these sessions as part of their PE programme, and did not offer their usual PE during weeks that guests were in the school.

An example of teachers’ lack of motivation to offer co-curricular PA was the poor response to the Active Schools Toolkit. Sam commented, in her second interview, that the toolkit was “still sitting under the desk where I left it at the start of the year.” She explained:

SPARC and the RST, spend lot of money on resources and advertising that they fire at us, but there is no back up for implementation. I supposed you are just supposed to pick up the card and do it, but as a classroom teacher, I have time restraints and other bits and pieces to do. (Sam, interview two)

In line with this Culhane had heard about the toolkit but commented:

It's quite a big manual, so how many teachers are going to read it ... no one is going to pick up a big manual and think about taking it home to read ... we already have so much to do. (Culhane, interview two)

MOVEMENT SKILL DEVELOPMENT

Determining students' progress

Determining students' progress in motor skill development was not a focus of the PD offered to Steephill School. Teachers were subjectively aware of student progress in terms of motor skill development, but did not develop any new skills that would enable them to monitor this progress in different ways. Even Sam, who had changed her way of monitoring student progress in line with using a learning book, felt that she was no better at determining student progress in motor skill development. She continued to monitor this based on her perception of what made a student able or not able to complete particular skills. Other teachers continued to use the can/cannot complete skill model for determining student progress. For example, Culhane commented in her second interview, on how she had three boys who could not skip, while the other boys "were pretty good." As she worked with these three boys, she had got them to a point where they could "skip as well as anyone else," therefore she felt that they had progressed.

Evidence of the contribution of physical education

The only available evidence of how PE contributed to the development of motor skills came in the form of Sam's learning book and the unit plans that had been provided by the SSS Adviser. The unit plans detailed curriculum links relating to Strand B1 of HPENZC. Sam's learning book, which included her PMI discussions, provided some evidence of students learning motor skills and areas where they were/were not making progress in. However, she did not know how she would use this information to help the teachers of her class next year make sense of where students were at. Other teachers had checklists of students' ability to perform certain skills, strokes in swimming,

throwing and catching, etc., but these did not provide evidence of how PE had contributed to student motor skill development.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

In the same way as above, there was limited evidence of how student achievement is linked to levels of development or achievement objectives. When the teachers at Steephill School, with the exception of Sam, have a limited understanding of HPENZC, and only remember the aspects relating to motor skill learning, then this will be reflected in student learning. We cannot expect to see evidence of learning across the curriculum objectives from HPENZC or development levels if teachers do not understand the curriculum.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

Rachel and Culhane felt that students were always keen and interested in participating in PA. All students interviewed from Sam's and Culhane's classes, were positive about participating in PA at Steephill School. They felt that they had lots of opportunities to be active, and that there was "heaps of gear" that they could use at break times. Students talked positively about having access to and supervision at the grass area, skate park and playground above the school. The Principal and one other teacher suggested that when the students were given access to PA opportunities in this supervised area, "more than 70% of the school are up there doing something, while the remainder are down here playing in the sandpit or using the monkey bars."

Gene (a Year 2 student) raved about how great it was to have a "soccer teacher" come in and take them for practices after school. The coach was a member of a local club who was taking the juniors for soccer after school. Along with Fred, a classmate, they had played in a competition against other teams from the school. Other students commented that they were playing in sports teams outside of school, such as soccer, netball and rugby. The senior students commented that they had done this in previous years as well. The teachers did not feel that there was any difference in the students' participation or in their attitude toward PA as a result of the PD. However, teachers did identify changes in the 'way' students participated in PA, and in their attitudes towards others during physical activities. Two teachers identified that as a result of involvement

in the TGfU unit, students were more co-operative when playing games, and that some of them thought more about what and why they were doing things and how they needed to interact with each other. Culhane also felt that her students were better at providing positive encouragement to their peers and were working on developing better fairplay practices.

There was a significant difference between how the students in Sam's and Culhane's classes understood what they had been learning in PE. Culhane's students were unclear about what they learnt from in-class physical activities. Their programme consisted of skills with Rachel, while Culhane took the remaining students for Lewis Ball (a modified game of long ball). In addition to these lessons, the senior classes also had fitness (which is PE according to the students), sport practice and training for events (JRFH, athletics, winter sports tournament). Fitness was done every day, be it skipping, relays, or laps. With a dominant focus on the development of sport-specific physical skills and fitness, it is not surprising that student could only recognise that they had learnt skills, such as throwing and high jump, and were unsure of what else they had learnt. They talked of doing fitness and sport, but were unfamiliar with the term PE.

In comparison, Sam had been experimenting with a range of foci in PE, including ABL, TGfU and playground games. Her students had learnt about positive communication and strategy as it related to the games they played. They were able to articulate their learning in what they termed "PE." For example, in response to a discussion about triangle tag, students talked about "protecting the target," "making it harder for the tagger" and having to "work together." They also talked about learning how to "communicate and work in teams" which meant that they had to "listen to each other" and "not fight" (three students from Sam's class). None of Sam's class talked about learning physical skills.

Conversely the parents of Sam's and Culhane's students predominantly thought their children were learning skills, such as ball skills, kicking skills, fitness skills and general sporting skills, including how to use a skipping rope. Two parents from Sam's class also commented on how their children were learning to have a good attitude and play fair through learning in PE. One other parent suggested that her child was learning about how enjoyable PA could be. Three parents commented that they did not know what their children were doing or learning in PE. However, most parents recognised that in PE their children were doing: Jump Jam, skipping, running, Ripper Rugby,

Aussie rules (AFL), games (including playground games and Lewis ball), and fitness activities.

STUDENTS' MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

Sam had been inspired to bring more outside groups in to deliver sports opportunities to students, as part of her experiences at the cluster meetings. Culhane commented that bring groups in outside groups for tennis, Ripper Rugby and AFL, had given students opportunities to develop a much wider range of motor skills than teachers were able to offer in class time. She thought the school should have more 'experts' come in to take the students, as they were generally younger and more enthusiastic and this motivated the students. While these sessions had proved positive in terms of students' access to new sports, Sam did not think that they enhanced teachers' understanding of the motor skills specific to the sports provided.

One other teacher commented that the "skill-based lessons in middle juniors have caused an effect on students' motor skills" (Teacher 55, questionnaire two). Over 77% of parents felt that their children's motor skills had developed during 2006, and this was evidenced in their involvement in physical activities outside of school. However, over 50% of parents put this down to their children growing and developing physically. Three parents commented that they felt the teachers had done more teaching of motor skills in 2006, and had been more encouraging of participation.

Professional development and facilitation

The teachers at Steephill commented that they had valued the SSS Adviser modelling lessons, giving them ideas for new activities/games they could do with their class, helping them identify the need to share learning intentions, and use some questioning with the students. However, the evidence from Steephill highlights some issues with PD that appear to have influenced teacher development.

UNDERSTANDING THE SCHOOL DYNAMICS

There appeared to be an expectation both within the school and from the SSS Adviser that Sam, as the lead teacher for Model 2 of the PAI, would lead the professional development within the school. Sam expressed her concerns in during interview one about this responsibility, and the lack of status that she had within the school. She was very conscious that she was not the management unit holder for PE, and therefore

was not in charge of decision making for PE, or the budget to allow for the purchase of gear.

It would appear that the PD had been beneficial in assisting Sam to broaden her understanding, knowledge and skills in teaching PE, however the PD does not seem to have supported her in the role of lead teachers, and creating change in school wide programmes and practice. Sam's comments, as a junior member of staff, would suggest that while she has tried to have an impact on other teachers, she has come to realise that she can only really make a difference for her class.

CATERING TO INDIVIDUAL DIFFERENCE

The teaching staff, and the Principal, at Steephill School were trained over 30 years ago, with the exception of Anne (third-year teacher) and Rachel (5–10 years experience). Their level of experience and understanding of PA and PE appears to have been influenced by the period in which they trained. Also, for teachers such as Culhane, nearing the point of retirement there appears to have been little motivation to engage in the PD or be challenged by it, as they had “seen it all before” (Principal interview). The Principal also commented that he, and the older teachers, were seeing it all “resurfacing out of the 70s,” there was “different terminology, but almost exactly the same programme going on as used to happen... skill teaching, and questioning” (Principal interview). This comment suggests that the PD offered nothing new to teachers' understandings, knowledge and skills in teaching PE. Given that Culhane could not remember having any training in HPENZC, it is surprising that the PD did not challenge teachers understanding of PE.

The evidence would suggest that some teachers at Steephill, and the Principal, were convinced that the programme they offered was in line with current PE theory and practice, and therefore seem to be less willing to challenge their practice. In this instance, a revision of the focus of the PD may have been needed in order to challenge the teaching staff in different ways.

Is this physical activity or physical education?

Sam outlined how she was confused by the terminology used within the PD. While “it is called the PAI, I think it is more a PE initiative, I don't know if it has got the correct label, as we have only really looked at PE” (Sam, interview two). In an initiative that

was designed to support the development of PA, curricular and co-curricular, it is apparent that the focus had solely been on the development of curriculum based PE. The RST was not seen as delivering PD as part of the PAI, during 2006. It is worth noting that the lead teacher (Sam) commented in her second interview: "I see SPARC as part of Push Play, obesity, get them moving, wider social engineering campaign, I don't see them as a helpful body for me as the primary school teacher." Both Sam and Culhane felt that SPARC/RST spent a lot of money on advertising and "fancy resources," but they did not ask the teachers what they needed to support them in their teaching, and this therefore resulted in them being of little use to teachers in the primary school.

Physical activity culture

There are few evident impacts on the PA culture that directly relate to involvement in the PAI. Of note are:

- The increase in equipment that was available to teachers and students for use while engaging in curricular and co-curricular physical activity;
- Better organisation of this equipment in the sports shed; and
- The introduction of outside groups delivering one-off physical activity sessions to the students, e.g., ripper rugby.

These were made possible after Sam attended a resource day PD late in 2005, where she was made aware of how to access grant money to purchase equipment, and what groups were available to come in and take sessions. She was also given some ideas about managing the sports shed. These changes enhanced the organisational, environment and community elements of the school's PA culture.

The curriculum aspect of a positive PA was a dominant focus of the PD, but as outlined above impacted significantly only on Sam's understanding and delivery of the curriculum, and to a lesser extent on other teachers. If a positive PA culture includes the delivery of programmes that supports student learning and has HPENZC as central to the learning and development of knowledge, skills and attitudes, then we should expect that students are at least aware of what they are learning, and that this learning is reflective of the a broad coverage of the achievement objectives outlined in HPENZC. However, this was not reflected in the practices of the teachers, with the exception of Sam.

Moreover, there seems to have been a move toward learning more than physical skills as part of Sam's programme, however, this does not seem to have transferred to other areas in the school. There does not appear to have been a school-wide change in terms of how curriculum time is used to deliver PA.

While limited changes have occurred directly as a result of the PAI, that does mean that Steephill School has not made a commitment to developing the PA culture, possibly without viewing it in this way. A major focus during 2006 was to improve the fitness level of the students. The Principal was a major promoter of improving levels of PA, without any support from the RST or support from SSS. As a result of the Principal's and the teachers' efforts, there were some changes made to the co-curricula programme. Changes included: the payment of an external person to run/supervise activities on the grassed area next to the school; the inclusion of Jump Jam to increase fitness levels; and information directed at parents about the need to think about a walking bus sort of concept. The school clearly placed value on providing and supporting PA opportunities for all students, and encouraged students to participate by providing a range of equipment for students to access and allowing students them to bring their own scooters and rollerblades, etc. to school to use during break times. The co-curricular programme of the school continued to provide opportunities for students to engage in appropriate physical activities for their level of development. The use of community-based facilities, including the local park, swimming pool and recreation centre, provided opportunities for students to experience PA beyond the school gates, and make links with local groups that meant they could participate both within and outside of school.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

The biggest promoter and supporter of a positive PA culture at Steephill School was the Principal. He set school rules based on encouraging healthy eating, and directed teachers to improve the students' level of physical fitness by mandating fitness testing and encouraging teachers to increase fitness as part of their curriculum programme. Steephill has identified the following factors that assisted the school to create a positive PA culture:

- Support from the BOT for extra staff to run PA at breaks;
- A direct agenda that promoted increased fitness levels, and provided curriculum time to engage students in aerobic activity;

- Funding available to access community facilities and expertise, such as the swimming pool and gymnastics centre;
- Expectations of parents to contribute to active transport, in the form of the walking bus; and
- Provision of opportunities for students, particularly seniors, to participate in interschool competitions.

Of interest is that while time for curricular PA was viewed as necessary, the form this took appeared to be left up to the individual teacher. With the exception of Sam, quality PE, linked to HPENZC, does not appear to be a high priority.

CHANGE PROCESSES AND FUTURE STRATEGIES

Changes as a result of the PAI can be clearly seen in the development of Sam's curricular delivery, and in all teachers' incorporation of learning intentions. Sam was enthusiastic and willing to trail new approaches, with limited support or understanding from her fellow teachers. Change at Steephill has been constrained by:

- The position of the lead teacher within the hierarchy of the school -
 Sam was the most junior teacher in the school. She did not hold the management unit for PE, and had no responsibilities for school-wide planning in this area. During the initial interview, she commented on the difficulty of working in isolation and not having the status within the school to influence change. This appears to have limited her ability to act as a leader for the development of PA in the school. While it appears that teachers were receptive to new ideas at staff meetings and during model lessons, there was no evidence of a shift in classroom practices, with the exception of including learning intentions. Without further support, it is unlikely that Sam will be able to create change in curriculum practice. Rachel had begun to attend workshops late in the year and this could have some impact, but at end of 2006, these impacts were not evident.
- Lack of understanding, willingness to change practice -
 Sam suggested that the PAI had given other teachers options to consider, that they had taken on board, but not really applied in their classrooms. As lead teacher, Sam thought that the lack of change came down to attitude and mindset of the individual. She wondered whether they were willing to change

the style of their teaching, and asked what expectations had been placed on them. Culhane's attitude was a case in point; she found it easier to pass curricular PA on to another teacher.

- Competing agendas -

For teachers at Steephill the fitness agenda had been a major school focus in 2006. The push from the Principal to increase fitness levels, an increase in fitness opportunities, as an aspect of curriculum time and the introduction of fitness testing created a competing agenda with the messages presented by SSS (the message from SSS encouraged an increase in time allocated for quality PE linked to the HPE curriculum, and a decrease in daily fitness).

Sam, recognised that in order to keep the initiative alive she would need to run additional PD for teachers, to check up to see if the learning gained from advisers model was continuing, and to continue to work on her own practice as a way of modelling to other teachers. Teachers and the Principal identified a range of factors they would need to consider in 2007 to continue to develop their PA culture, including:

- Continued support from the BOT for funding;
- Maintenance and enhancement of PA equipment;
- Flexibility of teaching responsibilities, particularly allowing Rachel to teach Culhane's class;
- Continued focus on student fitness levels; and
- On-going support from SSS for both the lead teacher and to run PD for others.

STEEPHILL SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. A junior member of staff as lead teacher, without support, appeared to create difficulties in relation to the dissemination of the PD;
2. Teachers are learners, and therefore diverse in their needs. The PD appeared not to cater to individual needs, and provide appropriate challenges to support teachers to engage;
3. The focus of the PD did not appear to challenge teachers who were content with the school PE curriculum, to broaden their understanding of HPENZC;

4. Competing agendas within the school appeared to inhibit the effectiveness of external PD;
5. Further PD would assist Steephill to achieve sustainable change,

CASE STUDY FOUR: WESTFIELD SCHOOL

Westfield School 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, and of these, eight completed the initial questionnaire in 2006. Disappointingly, only two teachers, one of whom (Mildred) was a lead teacher in the PAI, completed the second questionnaire. The three teachers who were interviewed and the other five classroom teachers participating in the case study were aged between twenty-six and forty-five years. There was a wide range of teaching experience in the school. Three teachers were selected to be interviewed and observed (referred to in this case study as (Thelma, Mildred and Clara). Thelma and Mildred were interviewed twice and were observed teaching a PE lesson. Thelma completed the initial questionnaire and Mildred was only able to complete the second. At the conclusion of the professional development, Clara was unavailable to be interviewed or observed in the classroom; however, she completed the second questionnaire.

Focus group interviews with students from Thelma and Mildred's classes, Year 1 and Year 5-6 respectively were interviewed and the parents of these students in the two classes responded to the parent questionnaire. The response rate from the parent questionnaire was 35%; the liaison teacher had misplaced some completed parent questionnaires. Clara's students were not interviewed, as it was impossible to access their consent forms, with her being away.

Mildred and Thelma had been designated the role of lead teachers for the PAI. Thelma was the teacher in charge of PE and sport at Westfield and Thelma was the teacher in charge of health. Thelma was confident about her delivery of PA and PE, however, Mildred commented that she lacked confidence delivering PA, but was keen to improve. Her own enthusiasm for being physically active and healthy had inspired her to improve her teaching in this area.

Prior to the PAI, the eight teachers participating in the case study at Westfield, had all had opportunities to participate in PD relating to PA and PE. This had included ideas and strategies to increase student involvement and ideas on what they could do with their students in terms of activities and skill teaching. Two teachers had been lead

teachers of PA/PE and two had completed some PD to improve their own physical skill base. One teacher had learnt how to organise school- wide PA opportunities.

The Principal at Westfield was also passionate about PA and had been an advocate for it since his early years as a teacher. He was interviewed twice, and commented that he was a trained primary PE specialist and therefore had many ideas about what PA and PE should look like in his school. He felt that recently graduated teachers lacked knowledge of developmental physiology and therefore had difficulty understanding the physical development needs of students. The Principal commented that the school was already “well down the track” in terms of its delivery of PA opportunities and he was keen to support any improvement. He felt that the school's involvement in the PAI would confirm the programme at Westfield and offer them new ideas.

Westfield School's focus, before 2006, was on formative assessment as part of their PD and this included sharing learning intentions with the students before each lesson, however, this practice was not used in PE classes. Of note, the school was involved in two other PD initiatives during 2006: the Reading Innovations contract, (a three year contract that the school was just beginning) and the Wellbeing in Schools project (WiSP)¹⁷ that they had begun in 2005 and completed in the middle of 2006.

PHYSICAL ACTIVITY PRIOR TO THE PHYSICAL ACTIVITY INITIATIVE

Westfield School's physical environment offered extensive opportunities for students to be physically active. The grounds included sandpits, steep slopes, adventure playgrounds, large trees for climbing and sizeable court and field spaces. The school had a hall that was used every day for fitness, at times for PE, and utilised in wet weather for PA. Six of the eight teachers surveyed felt that the school successfully

¹⁷ The Wellbeing in Schools Project (2005-06) delivered programmes in nutrition and physical activity to schools in North Shore and Waitakere Cities. It was supported by professional development for teachers. Educating NZ worked with The National Heart Foundation and Regional Sports Trusts to deliver this project. The objectives were: to support the effective delivery of nutrition and physical education as part of school curriculum; developing policies and initiatives for a healthy environment; and make links where possible with the wider school community, churches, social groups, local councils and Primary Health Organisations.

promoted health-enhancing behaviours through whole school community, policies and programmes. The school had established a PE curriculum team during the beginning of 2006, which included a person from each syndicate and Thelma as the PE/sports coordinator.

Five out of eight teachers indicated that PA was delivered in the following ways: in PE time - across key areas of learning, (predominantly PE and the arts); during whole school sport - fitness time every morning (in the form of Jump Jam); during break times; and before and after school.

Curricular physical activity

There was an expectation at Westfield that all teachers allocate time for PE and fitness in their class timetable. Some syndicates also offered additional PA opportunities such as Perceptual Motor Programmes (PMP). This included syndicate PE (also referred to by Clara as class sport), syndicate sport and fitness.

PHYSICAL EDUCATION/CLASS SPORT

The syndicates had timetabled PE sessions to run twice a week for forty minutes however, while some teachers acknowledged this; they did not always follow it. Clara commented in her first interview that as class sport was time-tabled at the end of the day, she often found that her teaching would encroach into this time and therefore she did not often deliver sport to the class. The teacher in charge of PE provided the teachers with a term overview of topics and they focused on teaching this. Topics covered across the year included: gymnastics, small balls, large balls, swimming, skipping, athletics, cross-country, EOTC, folk dancing and team games. One teacher also suggested that they include Te Reo Kori in their class. Senior students were also involved in an Aquapass award run by Water Safety New Zealand.

There was an expectation on teachers to teach the same content, however, it was apparent that the teachers were not consistent in their decisions about what content they would assess. Some teachers assessed in each of the following areas: motor skill levels, social skills, participation, effort, and fitness. One teacher was not sure what she assessed. Clara, as a recently graduated teacher, demonstrated a good understanding of HPENZC. She recognised that the school programme did not reflect the curriculum document, but felt that the crowded school programme did not allow time for her to deliver PE in a “more modern way.”

SYNDICATE SPORT/PERCEPTUAL MOTOR PROGRAMMES (PMP)

The two new entrant classes were involved in a twice-a-week PMP programme run by a teacher aide. Twice weekly, the middle school classes had syndicate sport when skill learning that occurred during PE time, was put to use with students involved in sport and game play with other students. The senior classes were not involved in syndicate activities, which Mildred felt was due to the teachers' desire to take their own classes. There were also concerns that one class may not manage to work within the syndicate.

FITNESS

Each morning, in addition to these opportunities for PA during class time, all the students went to the hall for a twenty-minute (fitness) workout. This took the form of Jump Jam and was led by a teacher and senior students who modelled the movements on stage. During fitness time, there was an expectation that students follow the teacher's actions and engage in a moderate to intense physical work out.

Co-curricular physical activity

SPORT

Students at Westfield had the opportunity to participate in sports teams and individual events in the local interschool competitions. These included the following: numerous basketball teams (mini-ball), netball teams, touch and rugby teams as well as swimming, cross-country and athletics. Thelma had taken responsibility for coaching the majority of the teams and for running lunchtime practices. She was eager to seek support from parents to manage and/or coach teams. During the winter term of 2006, Thelma was coaching three mini-ball teams and two netball teams and had little support from other staff or from parents. As sports coordinator she had hoped to encourage other staff to take more responsibility for school teams. The school also had community groups that ran activities that students could choose as an option, for example, soccer that was available for all interested students before school, and karate that was available in the school hall.

BREAK TIMES

The school's physical environment included steep grass hills and trees to climb and these provided many opportunities for students to be physically active. The students

also had access to an extensive range of equipment, such as stilts, balls and elastics. The Year 6 students already trained as sports leaders took responsibility for allocating sports equipment and running games at break times. Students utilised the adventure playground equipment that was available and played many of their own games. The students involved in school sport teams attended practices run by Thelma at break times. The teaching staff had a perception that the students were active and fully engaged at break times.

ADDITIONAL

The school, in conjunction with the local RST and the Heart Foundation, had run sports evenings as part of their involvement in the Active Mark Award¹⁸. These were opportunities for the whole school, including parents, to be involved together in a community event.

THE PHYSICAL ACTIVITY INITIATIVE

In 2006, Westfield School had been involved in the SSF PAI contract. The SSS delivered four external workshops to the local school cluster, and worked with teachers at Westfield. Thelma, as PE coordinator, had attended a series of workshops relating to the PAI during 2005, but she had had to stop attending because of other commitments. Despite this, she felt that her involvement advanced the school's understanding of Model 2 PD because it had allowed her to start analysing what was currently happening in the school. Mildred also reported missing a workshop, (due to no relief cover available), and felt "it was a big chunk to miss." Thelma and Mildred reported having focused on inclusive approaches to PE, TGfU, and throwing at the four cluster meetings.

The SSS Adviser came to the school and ran staff meetings in conjunction with the lead teachers, and where, Mildred reported, the lead teachers "shared what they had learnt with the other teachers." The support from the SSS included:

¹⁸ Active Mark is an award scheme that aims to improve the quality and increase the uptake of physical activity of children by developing quality frameworks and structures with the goal to create sustainable physical activity behaviours. It is very much a school driven programme. By meeting the criteria for Active Mark the school shows its commitment to developing physical activity in children and to build a healthier more active community.

- Ideas about ability grouping in PE;
- Direction on using learning intentions in PE;
- An introduction to using games for learning (TGfU);
- Planning ideas, including, “up-to-date” (Clara) lesson plans;
- Ideas on finding resources to support the curriculum, together with the Curriculum in Action series; and
- Support for the lead teachers in the development of policies, topic overviews and long-term plans relating to PA.

Teachers, who did not have a lead role, received all their professional development through the staff meetings and short discussions at syndicate meetings (Mildred, interview two). Mildred and Thelma had the extra opportunity to work one-on-one with the adviser in their classrooms where each teacher received a different experience. The adviser modelled a lesson for Thelma, team-taught with her and then carried out an observation followed by feedback. With Mildred, the adviser first observed the lesson and then modelled the same lesson. This provided an opportunity for Mildred to see how the adviser would handle the lesson. The adviser had observed each teacher once, however, Mildred commented that she if she had felt she needed more observations, or found she was struggling; the adviser would have come back.

The RST had supported the activity evening with resources but there had been no PD opportunity provided for teachers as part of the PAI. Mildred had made links with the RST education personnel as part of her involvement in the Wellbeing in Schools Project. Since then she had been receiving regular emails from a RST person about what was happening in the region. Thelma, as sports coordinator, had received PD support from the Heart Foundation and RST education personnel to develop and run activity evenings for the wider school community.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

The poor response rate to the second questionnaire (n=2) limited the data that could be drawn on to form conclusions relating to the impact of the PAI at Westfield. The data that was used to describe the impact on the school was drawn from the responses made by the following: Mildred, Thelma, and Clara, the Principal, the students and the parents.

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

At Westfield, there was some conceptual change in the teacher's perspectives of PE as a result of the PAI. Before the PD, teachers viewed PA as movement-based activities over a sustained period that increased the heart rate of the participants, and contributed to health and fitness. This included "walking to school, lunchtime activities, and playing a game for mathematics." (Teacher 21, questionnaire one). PE meant, for two teachers, the same as PA, however, for others PE was about:

- Learning skills appropriate to the age group;
- Education about and through using physical skills, strategies, body functions (science-based), and sports night; and
- Developing knowledge, attitudes and skills that children need so as to maintain their physical development as well as develop a positive attitude towards PA.

After the PAI, Clara continued to view PE as the "knowing or why part," which was explained as: "Why are we doing this? Why are we learning these skills?" and PA was explained as the "doing part" of PE (questionnaire two). Both Thelma and Mildred had arrived at the point where they understood that PE involved more than the learning of physical skills and using a teacher-directed approach. Mildred understood PE to be based on providing an inclusive and enjoyable learning environment where students have a say in their learning. She saw PA as continuing to include all the other physical activities students did, including Jump Jam, sport and playing in the playground. The conceptual change relating to PE had not been translated into a change in content of the PE programme. During 2006, the school had run the same PE programme, however, the way in which it was taught differed for Mildred and Thelma.

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

The impact of the PD on teaching in the school was most evident in the teaching by Mildred and Thelma. They had developed some PE practices to include questioning and had made changes in their lesson focus and structure. Because Clara was not available to be interviewed or observed teaching, the impact on her practice was less clear and can only be drawn from Clara's second questionnaire, Thelma and Mildred's impressions of her practice, the students' and the parents' comments.

As part of an on-going, four-year, school-wide initiative, all teachers focused on sharing learning intentions with their classes and worked to discuss the learning pre, during and post activity. The SSS supported and reinforced this initiative in their PD programme.

How I teach PE

Thelma and Mildred had changed the focus of their lessons toward a more student-centred approach and less on the development of motor skills. During the PD, the lead teachers had gained access to a range of lesson plans from the SSS Adviser that they had then passed on to the other teachers at Westfield. These lesson plans provided a framework that teachers could use to trial new ideas in the teaching of physical education. Mildred had trialled and adopted a games approach that changed both the structure and the learning focus of her teaching.

The way that I get the children to come up with additional rules or things that they would like to try out. The way that I get the kids back after the game and reflect back about what went well [and] what they could have done, and even talking a bit about, what they are going to do, before we go out. The way that I [talk] when they are in those small groups; I go round to each group and talk with the kids while they are actually doing the game, so I don't have to always stop them. (Mildred, interview two)

Mildred had also started using more questioning in her class and she found that she now knew “the types of questions and things to ask” in her PE classes. She had been using questioning in other parts of their teaching, including topic and language, but before the PD, had not understood how to bring this into her PE teaching. Mildred also explored using smaller groups for activities and grouping students based on ability and competitiveness as she felt this increased student levels of participation. She felt that this had given them more opportunity to contribute and therefore empowered them.

At first, it was quite a struggle getting them [the students] to go into smaller groups and not have a big game where they are waiting, watching and doing everything. They have sort of taken on the challenges and they are really good now at providing solutions to things and coming up with new ideas. (Mildred, interview two)

To encourage students to reflect on their learning, Mildred had adopted the teaching practice of first, sharing the learning intentions with the class before the lesson began and second, having students write in their workbooks about what they had learnt in PE after the lesson. She commented, “I didn't know how to change from the other way of teaching to this way” and therefore felt that the PD had allowed her to adopt a more holistic student-centred approach to PE, which she valued. As a result of these

changes Mildred felt that she was teaching her students to work together better as a team and to develop strategies in game play rather than only focusing on movement skills. In contrast to this, the Principal commented:

I still do not see enough skills teaching. I [am] seeing more but not enough. I am [still] seeing a heck of a lot of sport, with some very good skills from some children, but from some other children those skills are not great. That is the missing bit still. Why haven't those children had more skill teaching? (Principal, interview two)

Thelma, who had more experience and confidence teaching PE prior to the PD, had made what she called “small changes” to her teaching. Importantly, there were changes to her use of questioning to facilitate learning and her sharing of learning intentions with students. She had also moved to adopt a broader understanding of teaching movement skills, including the use of invasion games. Thelma found that she was talking more with her students.

I do a little bit more focus on talking about it and directing the kids a little bit about more what we are doing ... so yes that's probably [it] ... just talking to the kids a little bit more about what they are doing and just making them a bit more aware of things. (Thelma, interview two)

Thelma had used 'a little book' to engage students in talking about what they were learning and what they had done. This appears to have been related to sharing learning intentions with students. The inclusion of learning intentions into Mildred and Thelma's lessons continued the focus that had developed in other curriculum areas, over the past 4 years. Thelma, when she reflected on her use of questioning and her use of the little book, commented:

It is helping students to think about what they are doing and getting them to talk about it ... you are getting them to discover and ask questions themselves, more than just, this is how we do something (Thelma, interview two).

The changes in her practice had removed the focus on ball skills. As she related:

It is not thinking, 'Ooh, I have got to go out there and teach [the students] balls skills'. You know, rather [it is thinking], we are looking at movement and we are looking at space. We are looking at throwing objects or we are looking at those sorts of things. (Thelma, interview two)

While Thelma could not remember the terminology used, it was apparent, both in the lesson observation and in her comments, that she had worked on using the principles of TGfU (Target Games) with her students.

Other teachers

There was little evidence of a change to the schools' other teachers' knowledge, understanding or skill in teaching PE resulting from the PD. Thelma and Mildred were unable to identify any change in practice associated with the other teachers. Both felt that the other teachers had been receptive to the PD but had not extensively trialled anything new, other than "doing some of the lessons provided by the adviser" (Thelma, interview two), and were not confident enough to make change.

Clara commented in her questionnaire, that she had used the lesson plans that were made available by the adviser as well as the ideas, games and activities shown at the staff meeting. Clara had recognised, before the PD that the school's PE programme needed to reflect the needs of the students, however, the pressures of additional PD reading and responsibilities as a newly appointed AP had limited her involvement. She commented in the second questionnaire that she had not changed the structure or content of her lessons but that her lesson plans and learning intentions had become more focused on student needs. Clara had made changes to the topics she taught but only in relation to the lesson plans that she had received from the adviser. She recognised the need to commit to making broader changes and felt "slowly, but surely [that her] topics are slowly moving into modern ideas... and also reflect curriculum coverage more aimed at student needs" (Clara, questionnaire two). In her new role as AP, in charge of the junior programme, she was aware that there would be an expectation, by the school, that she take a lead role in supporting the development of a new overview in 2007.

Revamped overview

Mildred, supported by Clara and Thelma, focused on developing a revised long-term plan ready for implementation in 2007. Thelma was working with the SSS Adviser to redo policies for the Education Review Office (ERO) and the topic overview for the whole school. The Principal had organised that she have a release day to do this at the end of the year. The PE curriculum team, (Mildred and Thelma), had asked the teachers to complete a survey to obtain feedback about the current programme as well as ideas about what they would want in a new programme. The results were not available to the researchers, but when collated, Thelma used the feedback in her work with the adviser. Interestingly, although Mildred was confident that she would be involved, Thelma felt that she would be designing the programme on her own.

Teaching physical education

Before 2006, Thelma and Clara had been confidently teaching PE and continued to do so. However, the PD had improved Mildred's confidence in her ability to teach PE, especially as lead teacher. She enthused:

It is better and I know what I am doing ... where as, [while] I was confident teaching PE before, [it was] in a different format and a different structure. Now I know [this new] structure and how [it] works, and now I feel confident teaching [it]. However, I am still learning ... I think [of] all the information coming on board ... it took me a while to sort it out and to actually have the confidence. And I feel like next year I am going to be able to go out and make a lot more use of what I have learnt. (Mildred, interview two)

Mildred had initially been unhappy about being told she would be a lead teacher and that she did not have a choice in the matter, however, she had become appreciative of the Principal's decision to give her this opportunity, as she had "learnt so much" (Mildred, interview two). It was evident during the lesson observation that Mildred felt comfortable sharing learning intentions, using questioning and games in her lessons. She had adopted the TGfU approach in her teaching and used games and questioning more often with her classes. Mildred's confidence and sense of her own ability had developed to an extent that she felt confident to talk with the DP about running ten-minute sessions in the staff meeting. These would take place during 2007 to ensure ongoing support for the other teachers. This was something she would not have felt comfortable doing prior to the PD. She had also offered to prepare the unit planning for her syndicate for PE in 2007.

Mildred, Thelma and the Principal all commented about staff that had not demonstrated a change in confidence, or desire to deliver PE.

I do not think she has done any PE since they have been in there at all. They had no idea and that is frustrating. You can ... you can not force somebody to ... you can say we need ... I mean, I am sure she has a timetable ... or I know she has got a timetable, but she does not go out there. (Thelma, interview two)

Mildred felt that the teachers in her syndicate were at the stage she had been at, at the start of the year, in terms of their ability to understand PE and teach it. There was a consensus, between the lead teachers, that there was a need for on-going PD so that other teachers would feel confident delivering PE.

Offer co-curricular physical activity

Mildred had always been confident taking aerobic sessions for the school Jump Jam, as she had been an aerobics instructor, before she became a teacher. In 2006, she had established a school aerobics team for senior students, which involved her running practices during class time and at break times. The student group led the Jump Jam sessions for the school, which took the pressure off Mildred to lead this every morning. While hesitant at first, Mildred had organised the inter-schools aerobics competitions for the region. She felt that even though this had been a lot of work, it had gone really well and made her feel more confident in her ability to do it again.

Thelma, as teacher in charge of sport, continued to take a range of sports teams and activity evenings within the school. While the Principal commented on how much he wanted the school to offer a wider range of school teams there appeared to be little motivation from the teachers, aside from Thelma, to become involved. Thelma had later become despondent about this role and the responsibility it entailed, as she felt unsupported. She commented:

I am being told, you are really taking on too much, Thelma, but then, if I do not take it on, who is going to do it, because nobody else will. I mean I had trouble getting ... I was not going to be there for something and I had trouble ... The boys needed a basketball practice. You know, they play inside and I said, 'Look, I am unable to supervise the boys in the hall today, can anybody ...?', but nobody would volunteer and that rather frustrates me. (Thelma, interview two)

She recognised that all the teachers were under pressure with additional responsibilities, particularly those involved with the Reading Innovations project. This lack of support from other teachers had motivated Thelma to seek more support from parents. She worked alongside parents to get them started taking teams and then left them to their own devices. However, she commented:

They are, [senior management] [is] saying that because a teacher is not running the team, it is technically not a school [team] even though the kids are all from our school. They are wearing our school t-shirts and they have been practicing after school down here but it is technically not a school team. (Thelma, interview two)

Thelma was frustrated that despite having worked hard to coordinate parents as coaches, the teams were not recognised as belonging to the school. In addition, Thelma, motivated by her involvement in WiSP ran activity evenings that were well attended by the wider school community, including parents and students. There was

no indication from either the Principal or other teachers, that anyone other than Thelma and Mildred were involved in running co-curricular PA.

MOVEMENT SKILL DEVELOPMENT

Determining students' progress

There was no evidence to suggest that the PD had enhanced teachers' ability to determine student progress in movement skill development. Monitoring movement skill development not been a major focus of the PD. Mildred commented that she had had a brief discussion with the adviser, about assessing students, and consequently had a couple of ideas about ways she could do this. However, she had been thinking about the many other aspects of the PD and had not yet tried to assess movement skills.

The Principal was concerned that the ability to assess was an area of weakness for the teachers and felt that they needed to become more skilled at "analysing movement and development physiology" (Principal, interview two). As an ex-specialist primary PE teacher, he was disappointed that beginning teachers did not have enough training in assessment and that other teachers did not understand it, and therefore lacked confidence in assessing movement skill development. He had thought that the PD would have helped teachers in the area of assessment.

Evidence of contribution of physical education

Mildred had asked her students to reflect on their learning in PE and then record their thoughts in their books after each lesson. This provided her with evidence of how her students thought they were progressing in PE lessons, both in terms of their movement skills and other aspects. However, she was "still working on a written form of evidence for her own records" (Mildred, questionnaire two). She was aware that the school might need to develop some school-wide system for monitoring student achievement in this area.

Clara and Thelma used checklists for specific skills, such as swimming skills, catching and passing balls, to gather evidence of movement skill learning. These did not provide evidence of how PE alone contributed to movement skill development, but provided a record of progress in learning, from the wide range of PA student experiences. Thelma and Clara used these checklists for reporting to parents about progress.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

It was difficult to find actual evidence of links between student progress and levels of development, or achievement objectives. The unit plans, developed by both Mildred and the SSS Adviser, demonstrated links to achievement objectives at specific levels. However, the PD did not have a concentrated focus on assessment in PE and therefore, teachers had not gained an understanding on how to gather evidence of student progress in relation to achievement objectives, or levels of development. Teachers would need further PD to address this in the future.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

Mildred's students reported that throughout the course they had learnt:

- To play different games and work with other people (Angela, Year 5-6);
- How to keep fit (Daniel, Year 5-6); and
- About “good sportsmanship, how not to get into scraps and get along with people ... to socialise with other people” when playing games (Andrew, Year 5-6).

This reflects the change in Mildred's approach to teaching - she had incorporated more games and focused more on social skills than on movement skills.

The emphasis that Thelma had made with sharing learning intentions and using the little book to help students reflect on learning had reinforced this aspect of learning for her students. Even as New Entrant, Year 1 students, they were able to identify a wide range of activities and movement skills that they had learnt in class throughout the year. They commented more about learning specific movement skills relating to the activities that had they had done, such as cartwheels in gymnastics and going under water in swimming. They described their learning as follows: “throw for your partner ... and [do] not throw it too hard. Do it lightly so your partner can catch it” (Lilly, Year 1), “to look where you are throwing” (Monty, Year1), and to “aim it” (Taylor, New Entrant). They were clear about what the learning intention was and were able to comment on how well they had done at throwing.

Teachers had always felt that students at Westfield were positive about participating in physical activities. Thelma commented that her five-year-olds were always very keen to get outside and do activity. Mildred felt that the change to her teaching of PE had influenced some student attitudes and participation during PA.

*I do value that the children, who were not achieving in PE, ... are doing a lot better and they are not picking daisies and hanging around down there on the outskirts of the field like they used to ... and talking and ... because they are smaller groups they can not do that. They have to be involved, which is good. In addition, that was the main thing I think that I found hard before, coping with those children. 'Because we would get the competitive children that always want to play, but then they argue with each other. Therefore, fair play has come in a lot more [also].
(Mildred, interview two)*

Mildred's students were aware of the immediate changes to their teacher's practice.

Every month our teacher goes to this PE thing and she learns new games to play so we have different games, like cricket and something else mixed together, and then that's what we always play ... until she goes on another course. (Daniel, Year 5/6)

Mildred felt that, by teaching the games in the same way as the adviser, as soon as she learnt them, it reinforced the learning that had taken place for her at the cluster meetings. Mildred's students could name all the games that had come from the cluster meetings, such as 'defend the cone', 'scatter-ball', and 'rob the next', and commented that if they play them "all the time" (Daniel) "they get a bit boring" (Andrew) and that they wanted to play something different.

While there is no evidence to show a link between changes in co-curricular PA and the PD, it is worth commenting on the students' involvement in co-curricular activity. There had been an increase in the number of sports teams competing in the winter competition. Senior students commented that Thelma took most of these teams but that she "was always late to practices" (Andrew) and "sometimes does not remember to come at all" (Daniel). These comments may reflect that Thelma had responsibility for many co-curricular teams, as well as her own school responsibilities. Thelma could not identify why the number of sports teams had increased, as she was unaware of an increase in student participation in local sports clubs, however parents and students did report spending more time at home practicing the skills they had learnt in PE.

According to both the teachers and the Principal, student participation in co-curricular PA had not changed significantly during the year, as they reported that students had always been highly involved at break times. The interviews with the junior students

would confirm this. The New Entrant and Year 1 students were very excited about all the things they could do at break time. Taylor reported, “at lunch time [we] can do anything.” This included using the monkey bars and playing in the sandpit. They could also use equipment from the PE shed such as frisbees, hula-hoops, and skipping ropes. Students talked about the range of equipment they used from the PE shed, for physical activities at break times. However, the senior boys (Year 5-6) when interviewed, reported that most of the time they played sport with their friends, but occasionally they just walked around and talked when they were bored with the games everyone was playing. Angela (Year 6) felt she was “not very active at lunchtime.”

In the future, there is a need to look at student activity levels at break times, especially amongst the seniors, to identify patterns of activity.

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

There was no direct measure taken of the impact of the PD on student ‘movement skill development’ in extra curricular activities, however, over 85% of parents felt their children’s movement skills had improved. The array of parent comments indicated that their children were developing skills at school and were then using them at home.

Professional development and facilitation

Teachers reported that they enjoyed the PD they had received from the SSS Adviser. They had particularly appreciated the lesson plans, new ideas for activities, and in the case of the lead teachers, the opportunity to attend cluster workshops. Both Thelma and Mildred had found the observation of their lessons valuable and enjoyed observing the adviser deliver the same lesson, as this had allowed them to see alternative ways of teaching. For Mildred, the PD had allowed her to develop skills and confidence in the delivery of PE that she did not have prior to the PD.

*I found the practical part most useful; the workshops where I could join in a game and I could learn it for myself. I am not a really sporty person and I read games, and I think ... I do not get it straight away, but that was the most helpful to me ... to join in and enjoy the game myself and then come back and teach it, because I knew what I was doing.
(Mildred, interview two)*

In a similar way, Clara and Thelma had used the lesson outlines and the activities, provided by the adviser, to guide their teaching.

The teachers who were fully involved with the PAI indicated a mainly positive view about the content and facilitation of the PD. However, the PD delivered by SSS did not

lead to a school-wide improvement in the delivery of PE. The Principal had been confident that the PD, using Model 2 of the PAI, would support all his teachers in developing a better understanding of both PE, and their ability to teach it. However, the Westfield teachers were also involved in other PD initiatives; they were involved in the Reading Innovations project, the Wellbeing Schools project and had undertaken to have a school-wide focus on sharing learning intentions. Thelma commented that the PD had not been a priority focus for management and this had meant that the teachers in her syndicate had focused more on the PD for the Reading Innovations project. This had made it difficult for her as a lead teacher on the PAI.

I feel really, really stretched. I am a syndicate leader, I am a lead teacher for this Reading Innovations project, and I am also teacher in charge of PE and sport ... [as well as that] I am down in the new entrants' room, and that is what I [find] really frustrating'. I feel like I have not done my job properly in terms of [the PE, PD]. (Thelma, interview one)

Thelma felt that she needed to spend more time working within her syndicate to assist the other teachers with PE. Mildred also felt that in 2007 she would have to spend time modelling and observing lessons, giving feedback, and ideas to her syndicate, if the new overview was going to go well.

I think that perhaps, next year, the lead teachers could probably be a little bit more involved and try, because we all feel a bit more confident ... to get our syndicates moving with the sport and PE. I think that will give them [the other teachers] confidence. (Mildred, interview two)

Teachers reported that there did not seem to be any communication between providers of PD. In particular, there appeared to be a lack of coordination between SSS and the professional development providers working with the Wellbeing in Schools project. Westfield school will need to reflect on how appropriate it is to have several professional development initiatives running simultaneously.

Physical activity culture

During 2006, some changes made at Westfield contributed to the development of a positive PA culture in the school. Tangible links can be made between changes to the teaching of PE, outlined in detail in previous sections and the PD teachers received as part of the PAI.

As a result of the PAI, there was a commitment from the lead teachers involved in the PD to develop the teaching of PE at Westfield so that regular, broad, relevant and meaningful programmes of learning were available to the students. As Clara

highlighted, the programme was “slowly moving towards modern ideas of PE, with topics and curriculum coverage that is aimed more at student needs” (questionnaire two). Research in the future, will determine whether progress in the development of curricular PA continues.

Changes to co-curricular PA occurred during 2006. The Heart Foundation and RST personnel involved with Westfield during 2005, as part of WiSP, instigated the activity evenings run by Thelma throughout the year, before the PAI. There was an overlap between the goals of WiSP and the PAI. Both worked towards enhancing the school’s PA culture, and involvement in WiSP assisted Westfield in developing co-curricular PA programmes, while also developing partnerships with the wider school community.

There was also an increase in the number of students participating in interschool sports teams, which offered them greater opportunities to participate in physical activities. Parents organised many of the teams, as there was little support from the school’s teachers. The Principal and Thelma did not agree about what constituted a ‘school team’ and subsequently the Principal advised Thelma to reduce the number of sports teams to a more manageable level. Thelma thought that this would mean students who were keen to participate would not have the opportunities to be physically active. The expectation of the Principal to have multiple teams, without providing additional support for Thelma to manage them, may negatively influence the students’ experiences, as well as Thelma’s motivation. This might affect Westfield’s PA culture.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

Westfield teachers and the Principal recognised that a positive PA culture results from:

- Commitment by the school to PA, reflected in the school philosophy of the school, “right from the top” (Principal interview);
- The level of each individual teacher’s skills, both curricular and co-curricular;
- High level professional in-service training, both for curricular and co-curricular PA;
- Opportunities for students to participate in sports teams and outdoors activities; and
- Involvement of the parents.

The Principal had felt that it was important to ensure that the school was involved in the PAI and that it was given priority in the school, because he wanted to ensure that students had opportunities to be active at school and learn the importance of being active for health.

He had requested that Westfield be involved in both the PAI and WiSP, as he explained:

Westfield is a Wellbeing School. Food equals fitness ... and ... body movement equals activity, which equals brainpower ... all these linkages we keep pushing ... [I am] committed to well-being and want to break the cycle of some very in-active children out there that waddle home to their play station. (Principal, interview two).

CHANGE PROCESSES AND FUTURE STRATEGIES

While the Principal expressed satisfaction with the way in which the school promoted PA and the high levels of engagement by students both in curricular and co-curricular PA, there did not appear to be processes in place to support teachers to deliver in this area. The expectation that teachers undertake several intensive whole-school PD programmes within one year appears to have put undue pressure on teachers. Thelma highlighted how she felt that management had given priority to the reading PD and therefore the PAI had not been the central focus for most teachers, with the exception of the lead teachers. The Principal commented that he had been a little remiss, and not checked to see what progress was being made by teachers in relation to the PD they were receiving from SSS.

I know PE is on their timetables, but I have not gone out and checked to see if it is happening and that means I am remiss as the Principal, but then I am checking everything. (Principal, interview two).

Thelma felt that while she had been allocated time to observe and support the teachers in her syndicate, as a lead teacher for the reading PD, this same opportunity had not been made available for curricular PA, so she was not aware of what progress they were making.

In an education climate where numeracy and literacy outcomes are high priority, the Reading Innovations Project, for most of the teachers, according to Thelma and Mildred, became the dominant focus for PD in 2006. In order to sustain and enhance developments in curricular PA, it would appear necessary to ensure that all teachers, including senior management, prioritised the learning expectations in any one year. In order for Westfield School to sustain the changes that occurred during 2006, and

continue to support and develop a positive PA culture, they need to consider the following:

- Prioritising the development of a new PE programme;
- Allowing PA lead teachers time to work more within their syndicates on curriculum delivery of PA;
- Continue to seek in-service support from SSS, especially when they are not focused on other PD; and
- Revise the role of the PE/sports coordinator (Sharon) to alleviate the pressures in this area.

WESTFIELD SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Involved in multiple PD contracts appeared to limit the impact of Model 2;
2. Lead teachers appeared to need more time to develop understanding, trial new approaches and develop confidence with new concepts, before they were expected to professionally develop other teachers;
3. Teachers' confidence and ability to use general pedagogical strategies in PE lessons appeared to contribute to positive student attitudes and increase participation, however teachers need subject content knowledge and curriculum knowledge to sustain these changes;
4. Providing model unit plans was useful in assisting teachers to trial new approaches, but appeared to create a degree of reliance;
5. Teachers in charge of sport appear to need additional support in order to offer a wide range of PA opportunities for students.

CASE STUDY FIVE: METEORITE SCHOOL

Meteorite School 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 class. Within this case study the Principal, is from here on referred to as one of three teachers. When she speaks as the Principal, this is identified within the text.

The Principal, referred to in this study as Kylie, and the teacher of the Year 4-8 classes, referred to as Sarah, were involved extensively in the data collection for the case study, which involved two interviews, a classroom observation and the completion of two questionnaires. The other classroom teacher, referred to as Holly, contributed to both questionnaires. The parents of all students at Meteorite School were sent both questionnaires, and 68% of them responded.

Kylie, with over 15 years teaching experience, believed that it was important to seek out opportunities for professional development (PD). Each year her school had been involved in PD and had completed the Numeracy contract and Assess to Learn. Kylie had had very little PD relating to PA/PE, however, she had developed some understanding of HPENZC while teaching at another school. She reported in her initial interview that this knowledge had allowed her consider how to incorporate problem solving and peer coaching into her PE lessons. Sarah, in her four years teaching, had had support from the local SSS in helping her develop a games and fitness approach in her teaching that encouraged active involvement by students. She felt confident about delivering PA opportunities to her students but desired support with her planning, “especially with doing PE differently... and doing everything she needed to be doing with them [the students] ...[within] different age groups” (Sarah, interview one).

PHYSICAL ACTIVITY PRIOR TO THE PHYSICAL ACTIVITY INITIATIVE

All the teachers at Meteorite School were involved in delivering PA opportunities. They all commented that this was a necessity in such a small school. Sarah was in charge of PE, and helped with the planning for the two classes. Both Kylie and Sarah also had responsibility for organising sporting events. All three teachers commented in the initial questionnaire that they had responsibility as classroom teachers to provide PA opportunities for their students, and to decide when it would be delivered in class time. They felt that PA was important as it contributed to learning, promoted healthy bodies, developed life skills, helped with coordination and allowed students to vent their energy so they could be focused on other tasks in the classroom (questionnaire one). Holly suggested that even though they were a rural school, they were seeing some students who did not lead a physical life at home; students who used computers and play stations, and consequently were not understanding the benefits or enjoyment of being physically active. These students were commonly the ones who lived in the local township as opposed to the rural community. All three teachers felt that the school made a good attempt at promoting curricular and co-curricular PA, both in policy and practice. With the exception of a couple of their students, Sarah and Kylie both felt that their students had motor skills that reflected their developmental level, and some students were very capable. With small class sizes, the teachers were able to work one-on-one with students who were having difficulty with particular skills, such as the girl in the Year 4-8 class who could not swim or ride a bike.

Sarah and Kylie both recognised that their resources were very traditional, or focused on traditional sports. These did not suit the new activities or modified games that they hoped to deliver. This was an area they were hoping to explore more during 2006.

Curricular physical activity

PHYSICAL EDUCATION

At Meteorite School Kylie and Sarah both taught PE twice a week – Sarah to her class for about 45 minutes, and Kylie (Principal) to the Year 1-3 class, with lessons averaging 30 minutes duration. The other classroom teacher, Holly, rarely taught PE as the Principal delivered it to her class during release time. Kylie and Sarah had lessons that consisted of a warm-up, skill teaching and practices, followed by a warm down. As she had Year 4 to 8 children, Sarah used peer work to enhance learning,

and had older students teaching younger ones. She felt it was only manageable because her younger students were “quite capable,” and in her initial interview said that she was interested in learning how to cater to the wide range of needs that the diverse group of students had.

Responses to the initial survey indicated that PA was delivered during PE time, and where possible integrated across key learning areas (especially mathematics and the arts). The PE long-term plan consisted of aquatics, small/large balls, gymnastics, games, athletics, cross country, and folk dancing. All three teachers reported in the questionnaire, that they assessed their students motor skill levels, social skills, effort and participation in PE.

FITNESS

In 2006, teachers' beep tested¹⁹ all the Year 4–8 students at the beginning of the year to see what their aerobic fitness was like, and repeated it at the end of the first term. They planned to continue this pattern throughout the year to monitor fitness. To support all students, the whole school participated in daily fitness. This took the form of skipping, *KiwiDex*, Jump Jam, tabloids, running laps and shuttles, or games. Sarah commented that her students were very goal-orientated and actually wanted to do the beep test every week, however, she had opted to only do it at the end of the term. When they were re-assessed at the end of term one, all but one student had improved. This had encouraged Sarah to keep up with the daily fitness.

SPORTS AFTERNOONS

In order to give students more opportunities to participate in sport, the school ran sports afternoons two or three times a term. This was mainly massed games in which all twenty students could participate, or took the form of tabloid games. These afternoons, along with the sports events (swimming sports, etc.) were well supported by the community and parents, and were seen as a social occasion. Sarah and Kylie both felt that the community was very supportive of PA, but felt that they could not ask

¹⁹ The beep test - also call a multi-stage fitness test, is used to estimate the maximum endurance of an individual.

the parents to provide practical support in terms of coaching or organising lunch time activities, as they already asked so much of the parents.

Co-curricular physical activity

BREAK TIMES

At Meteorite school, students had opportunities to be involved in PA during morning tea and lunchtimes, as well as after school. The students had access to a variety of sporting equipment, a large adventure playground, court space, a maypole [very popular], basketball hoops and a large grassed area. During break times the “boys are very active, the girls less so... but all right” (Sarah, interview one). In the initial interviews, Kylie and Sarah talked about improving the way in which students related to each other at break times. There was a concern expressed by teachers that the students did not play well together at break times and often someone was ostracised from the group, which left very small numbers available to play in games. Also, the boys and girls did not mix in the playground and so this limited the activities that they children could be involved in, namely team games. Neither Sarah nor Kylie had an issue with the activity levels of the majority of their students, or with the promotion of physical activities, however, they recognised that there was a need to develop more positive interpersonal relationships within movement contexts, especially to create a more harmonious playground.

At the end of 2005, the current Year 7&8 students were provided with the opportunity to be involved in a leadership and ropes course. It was hoped that this would assist them in providing more leadership in the playground, but so far had not appeared to make much difference.

INTERSCHOOL SPORT

The school worked with the local cluster schools to run swimming sports, a triathlon, gymnastic competitions and a cross-country. This gave all students, seniors and juniors, the opportunity to participate in interschool events and interact with other students of their own age. Students were not involved in the centralised (major centres or regional) competitions.

The school numbers meant that in order to participate in Saturday sports, students had to join other school teams. Senior students commented that they would like to have

their own school teams, however, they recognised that this was not possible in a small school. They concluded that while this was a downfall of being in a small school, the academic opportunities of having smaller classes made it a fair trade. Consequently, they were resigned to participating in mixed teams with members from other schools and did participate in a number of teams, including hockey and rugby.

THE PHYSICAL ACTIVITY INITIATIVE

Late in 2005, Kylie, as Principal of Meteorite School, became aware of the opportunity to be involved in the PAI. She felt that they needed to take this opportunity while it was available and that it may provide them with some support for getting all children involved in physical activity, particularly for social reasons in the playground. She hoped to see improved practice, by all three teachers, particularly in the area of PE curriculum delivery that would meet the needs of all the children. Kylie also felt that it would provide an opportunity so see what Meteorite was doing well and get all staff and the parents involved.

With small student numbers it was possible for both Kylie and Sarah (as the lead teacher) to attend workshops run by SSS, while Holly taught both classes. The aim of their work with the SSS Adviser was to change the focus of their planning, and to move beyond traditional topics and teaching models of PE. There was a strong focus on TGfU and moving beyond sport-specific skill teaching, to looking at motor skills, such as rotation, as they relate to a play, games and sport on a whole. Kylie and Sarah both commented on the benefits of seeing demonstrations, at the workshops, of activities they would use with their class. These demonstrations, and their own engagement in the activities, had made the teacher learning more beneficial.

Initially there was a concern that the cluster workshops were directed at large schools, and therefore were not relevant to the Meteorite context, however to address this the staff were able to make use of the adviser to work with their school individually.

Adviser visits allowed time for Sarah to work exclusively with her and also extended into staff meetings, where all three teachers met with the adviser. While staff meetings during the early part of the year focused on broader topics such as good teaching and models of teaching PE, they became more focused on Meteorite School's specific areas for development as the year progressed. During term three the SSS Adviser also spent time working with them on the development of their nutrition unit that took the place of PE for the term. In addition, all three staff had the opportunity to be

observed teaching and all received feedback from the SSS Adviser. They also used release time for Sarah to work in conjunction with the SSS Adviser to develop the long-term plan, to be implemented in 2007.

In previous years, Meteorite School had used the Regional Sports Trust (RST) to support them in their teaching of physical skills/games, for resources and to access people with expertise. At the beginning of 2006, Meteorite School was invited to be on the Active Schools Toolkit training, delivered by the RST, during Term 3. This was attended by Sarah who found “it repetitive [repeated] ... what she was doing in the initiative” (Sarah, interview two).

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

There was a significant shift in the Meteorite teachers' understanding of PE as a result of the PD. At the beginning of 2006 teachers at Meteorite School understood PA to be about providing opportunities for all students to be active, both in the classroom and at break times. Sarah and Holly saw PE as specifically relating to the development of physical skills, while Kylie, the Principal, saw it as “delivering a programme that follows the NZ Curriculum document. It will be a balanced programme teaching attitudes, skills, combining good teaching practice - using assessment, meeting needs” (Kylie, questionnaire one).

After the PD, teachers had not changed their views on PA, but had rethought what constituted PE. Kylie, who had already viewed PE in relation to the curriculum document, now realised:

The benefits of physical education in a broader context, and its more social context. I see Phys Ed as a really good context, relay 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, we had to work at it, and I say PE is a great way to do it” (Kylie, interview two)

For Sarah there had also been a change in her understanding of PE.

It's 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, just motor skills. (Sarah, interview two)

'Quality-teaching methodologies'

All three teachers at Meteorite School commented that they had focused on incorporating “quality-teaching methodologies” (Kylie, interview two) into PE lessons, including sharing learning intentions, developing success criteria, using questioning and reflecting on the success criteria at the end of the lessons. Both Kylie and Sarah demonstrated the use of quality teaching methodologies in the observed lessons. Kylie commented that the staff were already “quite a long way down the track in using learning intentions, and success criteria” but admitted that they had not previously been employing the same strategies in their PE lessons. As a result of the PD there had been a concerted effort to incorporate learning intentions and discussion about learning into PE programmes. The teachers had begun using learning books/journals to share the learning intentions with the class and to reflect on learning after the lesson.

Kylie and Holly felt that the Year 1-3 class had more voice in the direction of their learning as a result of having a learning book, which also ensured that they as teachers were focused on meeting student needs more acutely. Kylie described how she saw her lessons running after the PD as opposed to prior:

I think the children would be taking a lot more responsibility for it, I think they would be asked for their comments/feeling a lot more. Before it would have been a teacher with a whistle, do this, do that, line up here ... a lot more ownership of what they were doing. It would be different for parents to see us sharing '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 (Kylie, interview two)

The senior students (Year 4 -8) talked about how their teacher, Sarah, shared with them what was going to happen before they left the classroom, through a learning journal, and then they also discussed it when they came back in. Rose, a Year 5 student, commented that Sarah “explains it [what they are learning] nice and clearly inside, so as soon as we get out there we are right into it.” Sarah’s learning journal allowed her to reflect on where students were at in terms of the success criteria, and therefore allowed her to plan according to student needs. She commented, “It’s nice because you plan for the needs of the kids” (Sarah, interview two). All three teachers

felt that the reflection on learning that occurred at the end of their lessons helped reinforce the learning for the students.

Varied approaches

Throughout the PD, the teachers at Meteorite School explored a range of teaching approaches, particularly the Games Approach (TGfU) and a thematic approach to movement. After just two workshops, Sarah had learnt that PE did not need to be taught “with large balls or gym equipment,” as she had previously thought. All teachers found that by using a thematic approach they were able to cover a “wider range of topics,” rather than focusing on a particular sport. Kylie talked of “focusing on larger headings, for example, rotation rather than looking at teaching hockey” (Kylie, questionnaire two). This had challenged her to question the school’s long-term plan, and the topic, traditional sports-based focus. The PD in 2006 gave teachers the opportunity to trial a games approach, and a unit on rotation and pathways, working from the *Moving in Context* resource, as opposed to delivering PE lessons that were teacher directed and focused on developing specific motor skills for a particular sport. The teachers worked with units that allowed for a more student-centred approach. Both Sarah and Kylie used units of work that had come from the SSS Adviser to guide their teaching, but due to the diverse age groups they worked with in each of their classes, they had had to modify these to meet student needs and abilities.

Kylie had found that by using a thematic approach to rotation she had been in a better position to cater to the diverse range of abilities and age groups within her class. While the more able students had been able to extend themselves by exploring rotation over a vault, others with less confidence had looked at rotations using equipment such as poi and skipping ropes. She felt that there was “much less pressure on students who were not so confident ... [they] got to choose different activities, so were not all having to do vault” (Kylie, interview two). Kylie also found that in the rotation and pathways unit with the Year1-3 class, she had been able to explore a range of skills and not have to have everyone doing the same thing all at once. She also had explored how to keep oneself and others safe while doing rotations, and this had helped her understand that more could be included in PE than motor skill learning.

All three teachers were excited by the games approach to teaching, as it allowed them to develop skills such as problem solving and conflict resolution. Sarah had found a

particularly useful site (www.playsport.net) for accessing games to use within her lessons. She commented:

They liked starting with a game, stopping, thinking strategies, and then 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” they’re their rules so can’t get frustrated with it. Students can play together without them getting upset. They are all now participating. (Sarah, interview two)

Kylie also appreciated how it gave the students much more ownership of their learning and the outcomes of the games.

I think they have been more responsible for the direction we go in, instead of the teacher deciding. I think the games approach is good for that. Obviously you choose the game that is going to have the skills you want to develop I suppose you are just letting them realise and acknowledge the skills that they need. (Kylie, interview two)

After trailing the games approach, the teachers at Meteorite School identified that PE contributed to the development of more than physical skills. They had noticed the development of attitudes, values and particularly social and cooperative skills. The games approach was particularly influential in their practice because the effects of teaching lessons using this approach had become evident in the students interactions both in other classes and in the playground.

New Overview

Sarah had begun working on developing a new overview for PE, to be implemented in 2007, that moved them on from their traditional multi-activity, sports-based programme. As Principal, Kylie recognised that the new overview would:

... look more at things like rotation and pathways, and nutrition and those sort of things, they will be looked at more in that context rather than doing hockey ... that will be part of a bigger unit on pathways (Sarah, interview two)

However, she also conceded that there were still some things that they would have to fit in with, including cluster swimming sports, athletics, triathlon, gymnastics and cross-country. She expected that students would still have opportunities in the revised overview to develop the necessary skills to participate in these events. Sarah had begun working with the SSS Adviser to gather ideas. A new overview would require multi-level planning within each classrooms programme. While this was a common issue facing the teachers at Meteorite School, planning for PE in this way was going to offer additional challenges, within a subject where individualised programmes were not

always conducive to developing interpersonal skills. She recognised that she would need to have consider carefully what was appropriate for the juniors in comparison with the seniors. In relation to the games approach she felt that they were most likely to have the Year 1-3 class focus on playground/tag games and then have the seniors working on target or invasion games.

An issue that Sarah was aware of was making sure there was enough variety in the programmes, for example, she wanted to ensure that those students who spent four years in the senior class, did not experience a repetitive programme or the same activities every year. To support this she was making use of a range offer resources including the Internet, ideas from the students, *KiwiDex* and ideas from the adviser. She had also rethought what sort of equipment purchases the school would need to make to support the new programme, including bean bags, hacky sacks and soft toy objects to throw, not just a ball. Follow-up research is needed to determine how the issues facing such a small school, in terms of programming, were resolved. As Sarah was leaving the school at the end of 2006, she recognised that she would have to get the overview up and going for term one, 2007. She planned to have the overview written and detailed plans for term one developed by the end of 2006.

PERCEIVED COMPETRENC AND CONFIDENCE TO TEACH PHYSICAL EDUCATION

All three teachers reported feeling more confident delivering PE, and were motivated by the positive outcomes they had seen for their students. Kylie felt that she could “get the children more involved in decision making which has created a real positive feeling” (Kylie, interview two). Sarah felt more confident because she had “a better understanding of PE and how important it is for children, [and] more knowledge of meeting children’s needs and teaching to get them involved” (Sarah, interview two). Sarah also felt that what she was teaching was more beneficial to the students; that they were “probably learning better things and they were enjoying it more.” This made the changes she was making worthwhile.

As an outsider observing the lessons delivered by Kylie and Sarah, it was evident that they felt relaxed about teaching their classes. They both chose developmentally appropriate activities, and lesson intentions, and demonstrated the ability to use questioning to encourage students to reflect on learning.

MOTIVATION AND CONFIDENCE TO OFFER CO-CURRICULAR PHYSICAL ACTIVITY

Holly felt more confident about delivering physical activities for her class. Sarah had been motivated to take extension sessions of gymnastics for those children competing in the regional competition. She used these particularly with her more able students, who she felt she could not always extend in her own lessons. However, all three teachers felt less need to offer co-curricular activities at break times, as the students had become better at facilitating their own games, as a result of learning in curriculum time. Kylie commented:

We have seen a huge change in what goes on at lunch times ... children are much better at solving their problems are playing a much wider variety of games, and we are not having to sort out problems all the time. They are much better at going out there trying something new, sorting out the rules before they start and getting on with it. It has been a process ... Hasn't all been smooth ... but very, very positive. (Kylie, interview two)

MOVEMENT SKILL DEVELOPMENT

Determining student progress

While the focus of the PD had been on PE, there had been not been any spotlight put on how to monitor student progress with movement skills. The use of the learning book/journal has allowed the teachers to have a record of student learning, but as this had mostly related to social/strategic aspects of movement they had not always allowed teachers to monitor student progress in movement skills. Therefore, teachers continue to monitor student progress mostly using observations, peer and self-assessments. Sarah felt that “being able to read a game, or your partner [opposition player], helped with motor skills” (interview two), but she had been monitoring their strategy not necessarily their movements.

Evidence of contribution of physical education

Sarah wrote, in the second questionnaire, that she did not maintain any specific documentation as evidence of how her teaching was contributing to movement skill development. However, as she only had nine students in her class, she found it possible to identify where individuals had improved across the course of a unit. She had recognised who had made the most progress in the rotation unit, and who was still having difficulty. She did not see her learning journal as evidence, but with development it could become a record of progress. Kylie had continued to use

checklists with the junior students to record how they were progressing with their motor skills. She recognised that they, as a school, were not very good at recording how student s skills were developing, and felt that was an area that they would need to look at next year once they had developed a new overview (Kylie, interview two). The fitness testing that they were completing each term was the only evidence gathered across the school to show how students were progressing in physical activities, with a singular focus on aerobic fitness.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

At Meteorite School the teachers were expected to deliver a multi-level approach to teaching and to cater for the needs of the diverse levels within their classes (Year 1-3 and Year 4-7). As Sarah expressed in her first interview, she found it difficult to plan to meet the needs of all the students in her class as they were working at different levels. This was an area that she wished to focus on during the course of the PD, however, it was not a dominant feature of the support she received. At the end of 2006, there had not been a plan developed to show how the learning intentions, or student progress was linked to levels of development or achievement objectives. An increased understanding of HPENZC, particularly a broader understanding of the achievement objectives, may support teachers to provide evidence in the future. Further research is needed to see if there is change in this area.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

The developments in the teaching of PE had a significant effect on students' attitudes and interactions while participating in PA. Teachers felt that the most positive outcome of the PD, especially the use of the games approach, had been on students' attitudes toward participation and towards their peers. For students who had previously opted out of PE, the changes in curriculum PE appeared to have provided them with more opportunities to feel safe/comfortable participating (both in and out of the classroom). Teachers reported that students who had previously been hesitant about participating had become more willing to be involved during class activities. For Sarah the games approach had made a significant difference to students' level of enjoyment and therefore participation. When using the traditional sports approach Sarah had been

aware that some students felt “real pressure to perform” and were “automatically put off”(Sarah, interview two). Using games had taken away much of this pressure and students had become more comfortable. Kylie had recognised a similar effect. Children, who Kylie had originally noticed, were lacking the confidence to do PE in front of their peers, became willing to “have a go.” She commented:

I think if you are specific, or they are specific about what you need to improve on, it makes it a lot easier for those children [that lack confidence]. Because they are concentrating not on what they can't do, but on something that they need to work at, that they need to put into practice (Kylie, interview two).

The increased level of confidence and participation helped with not having so many crying and not wanting to do PE and more importantly for them, transferred into the playground setting, which made for a more positive playground culture. Previously the students had played at break time in three groups: “All the boys play together, all the girls play together and all the junior play together it was three different groups in the school playing together” (Edward, Year 6). “But now its basically two ... the juniors and the seniors, but some of the junior play with the seniors as well” (Rose, Year 5), depending on what game was being played. Learning new games in class had also given them ideas for activities they could play altogether during breaks, and they felt that they were able to modify these games so that the juniors could play as well.

All students were able to articulate what they had learnt from PE during the year. When asked, the senior class talked of being able to “cooperate with girls ... boys and girls don't often get along ... I do that better now” (Edward, Year 6), and “throw better as part of the games we have played” (Rose and Feather, Year 5). Bob, the youngest member of the senior class (Year 4) commented, “We are learning to not fight in games ... and sort it out ourselves if we have an argument ... we are working on it.” All the senior students recognised that they were still in the process of learning not to fight and sort their own arguments out, but were much better at it than at the start of the year. Students' comments reflected the teachers' feelings about the significant shift in attitude and participation at break times.

Sarah was aware that for her students the development of motor skills had occurred while she was exploring new approaches, but felt that learning motor skills had become more incidental, rather than be the focus of the lessons. For the junior students who focused on “spinning around” (Margo, Year 1), “skipping” (Derek, Year 3), and “learning to move in different ways” (Sonya, Year 2), and now throwing in their

PE classes, the games approach had allowed students to really focus on the skill, throwing, that was needed for a range of games. The improved skill meant students were “better at doing more games” (Derek, Year 3). Rose (Year 5) suggested that having improved at throwing in the games unit, she was now able to play more games at lunchtime.

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

Teachers had not been able to identify if students movement skills had developed in extra curricular activities. However, over 80% of parents commented that their children’s movement skills had improved, particularly with throwing and catching, targeting and general ball control. Parents put this progress down to:

- Teachers having a strong focus on physical activity and health, and specifically teaching skill elements;
- Children engaging in challenging activities, especially in the playground, giving students more opportunity to practice the skills;
- Increased interest of children and more encouragement from teachers and parents; and
- Children growing and developing.

Professional development and facilitation

Kylie felt that they had had an in-depth experience during the PD. She described the PD a “quite intensive ... it’s been regular which is great, as it helped us keep the momentum going... regular keep it right up in your focus” (Kylie, interview two). The PD had tied in with learning they had experienced during the *Assess to Learn* contract, and helped them transfer quality-teaching methodologies into PE.

While initially Sarah had been concerned that the PD was not designed to cater for such a small school, this concern was reduced as the PD progressed. Sarah had found aspects of the cluster meetings frustrating, especially when the examples that were used related to addressing PE in large urban settings, however, she valued talking with other teachers at these meetings, particularly those from other small schools – they had been able to share ideas about multi-level planning.

The time that the adviser had spent in the school had been very productive, with all teachers commenting on how learning a range of teaching approaches had been of

greatest benefit. The teachers did feel that they could have benefited from more practical ideas and activities. Holly felt that there were times when there was too much theory. With such a small staff and only two classrooms, it had been possible to release Sarah so that she could spend more time with the adviser. Sarah had valued the opportunity to have “one-on-one support to talk about [her] teaching style and programming” (Sarah, questionnaire two). In addition, it had been possible for the adviser to do multiple observations with all teachers and provide feedback.

Kylie, as Principal, was very pleased that there was another staff member, Sarah, who had driven the initiative within the school and developed an expertise in the area, as this meant the loading was shared around. However, with Sarah leaving at the end of 2006, Kylie recognised:

Maintenance that's always a challenge, we've changed our practice, but its very easy to slip back, and I think as a Principal I am very conscious that we need to keep going ... I would hate to lose what we have gained this year (Kylie, interview two).

She was interested in reviewing the programme during term four, 2007, to assess progress.

Physical activity culture

Meteorite School was committed to having a school culture that was positive, caring and sharing. In the interests of achieving this, Kylie, as Principal, was keen to ensure that the students' experiences of PA were positive and fulfilling. While the school ethos, organisation or community partnerships had not been explored as part of the PD, all three Meteorite teachers commented that student engagement in PA was much more positive as a result of the PD. It was not evident that either Kylie or Sarah had developed an understanding of the term 'physical activity culture' as it has been defined by the Ministry of Education, but both recognised the important relationship between curricular and co-curricular activity, and the impacts that changes to physical activity practices had on school culture.

The focus of the PD had been on curriculum PA, however, development had also occurred in co-curricular PA. As outlined in detail in previous sections, there had been significant changes made in teachers' attitudes and approaches to the teaching of PE, and this had impacted on how students participated in activities at break times. Kylie felt that the learning that had occurred in their revised PE lessons had assisted in creating a positive environment for PA.

Sarah and Kylie suggested that the professional learning that had occurred during 2006 would provide a means to addressing broader social issues that were apparent within the school at the beginning of each year. Sarah reflected on how difficult it was to integrate the Year 4 students into the senior class at the beginning of the year. As a result of the PD both Kylie and Sarah had recognised the important role that PE could play in developing positive classroom environments, especially as students moved up from the junior to the senior class.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

Meteorite teachers recognised that a positive PA culture was supported by:

- Committed teachers, who provided positive PA experiences for their students;
- Quality PE, that was delivered in line with quality teaching pedagogies, planned using a range of approaches, and focused on broader goals than simply the development of movement skills and;
- On-going PD and support, both among teaching staff and delivered by external 'experts' in the form of advisers; and
- Support of the parents and community, and parental awareness of what the intended learning for their children involved.

The learning that occurred for Meteorite teachers as a result of the PD highlighted the important role that quality PE education programmes, delivered well, can play in the development of a positive PA culture. However, teachers recognised that there was a need for continued support in order to maintain the progress that occurred in during 2006.

The teachers at Meteorite were aware of the immense community support that they already had for physical activity and particularly for enhancing the physical environment of the school. This included parents mowing the fields, repairing playground equipment, managing the pool and supporting fundraising events. Parents were also readily involved in the school-wide events, such as the triathlon, where they offered encouragement to their children and support for the staff running the event. Without the support of parents, the school's physical environment would not be as conducive to physical activities, and teachers felt that students would not be so engaged in the school-wide events.

CHANGE PROCESSES AND FUTURE STRATEGIES

The progress made at Meteorite can be attributed to the small committed staff, who all had multiple opportunities to be engaged in the PD. Both Kylie and Sarah were able to attend the cluster meetings, as with a roll of only nineteen, Holly could cover for both classes. This approach had allowed Kylie, in her role of both Principal and classroom teacher, to develop an understanding of the curricular PA and what changes/development were needed within the school environment. The joint understanding gained by Kylie and Sarah allowed them to reflect on what they were doing and what they believed was important, and then make immediate changes to their practices, while only having to assist one other teacher to develop an understanding, by communicating new ideas and helping with planning.

With small numbers it was possible for the SSS Adviser to work with all teachers and give them each individualised support. Meteorite provided the opportunity to run a whole-school model of PD where each teacher had access to reflection, support and guidance. In order to sustain the changes that have occurred and continue to support and develop a positive PA culture, Meteorite School have considered the following strategies:

- Access continued support from SSS.

In light of the changes to staff for 2007, Kylie hoped to see some support from SSS to assist the new teacher coming in and “get them up to speed with philosophy and how to go about it” and “a little bit of support next year just to keep us going, to make sure that it is still being implemented.”

Holly and Kylie, felt that they would benefit from more practical ideas to support their teaching in PE. While they had developed a new range of approaches they recognised that repetition of these would not always engage their students. While they would access a range of resources, such as the Internet and *KiwiDex*, they felt that advisory services could provide more.

- Develop a long-term plan to meet the needs of the diverse range of learners in each class.

This process had started early in term four 2006, with the intention of having it completed by the beginning of 2007. Issues of multi-level planning within each

class would need to be addressed in order to ensure that the needs of all students were met across progressive years.

- Ensure parents are aware of developments that are occurring in the school.

During 2006, although parents had become aware of the introduction of Jump Jam, and the beep test (parent questionnaire), they had not identified a change in the learning outcomes resulting from PE, such as the development of interpersonal skills. Kylie recognised that it would be important to ensure that parents understood the change in direction for physical education if the home-school partnerships were going to support learning that was occurring in the classroom.

METEORITE SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Change to the approaches used in PE programmes appear to contribute to student attitudes and engagement in co-curricular PA;
2. Smaller staff numbers make the impacts of PD more evident for all staff members;
3. Sustainability is potentially vulnerable to changes in school staff, particularly when a lead teacher leaves. On-going PD would assist in managing staff changes;
4. Quality PE can support students to develop positive interpersonal relationships;
5. Principal involvement in all aspects of the PD seems to assist in the change process.

CASE STUDY SIX: STADIUM SCHOOL

Stadium School was a decile 6 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. All fifteen teachers completed the initial questionnaire, of whom, twelve were women and three were men. Three of the staff were aged under twenty-five, eight were aged between thirty-six and fifty-five years of age, and four were over the age of fifty-six. Six teachers had less than five years teaching experience, one had six to ten years' experience, and eight had been teaching for more than fifteen years.

Fifteen teachers completed the initial questionnaire, and nine completed the second questionnaire. In the first round of data collection, four teachers were interviewed (referred to in this case study as Gina, Wendy, Honor and Gordon. Gina, Wendy and Gordon were observed teaching their Year 2, Year 3-4 and Year 7&8 classes and were later interviewed. The parents of the students were sent questionnaires and 67% responded. Honor was not available for the second round of data collection.

All the teachers at Stadium School had some previous PD focused on PA. Their previous PD mainly related to planning, and teaching PE in the classroom. Two had been lead teachers of PA and PE and four had been involved in PD for personal skill development, and for student activities on wet days; each delivered by the Resource Students Trust (RST). Two teachers had also experienced PD on the organisation of school-wide PA opportunities.

The school had recently completed their involvement in the Numeracy project, and in 2007 will focus on ICT as part of a local cluster. The priority focus for PD for 2006 was the PAI, however, there were still some teachers involved in on-going PD on literacy.

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

The school had recently moved to a new site, which had limited playground space. Stadium school had junior and senior adventure playground areas, two tennis courts and a grass space approximately the size of a soccer field, all of which were available for PA. There was also a grassed area between two classroom blocks, which was used for fitness, but was not suitable for ball games and other activities at break times.

The school's roll was increasing and there was a plan to develop this grassed area into classrooms, reducing the area available for PA. Stadium School had limited opportunities to use a local hall, dependent on community needs. Gina commented that it was a useful space, but it was particularly hard to book, especially in the winter terms when it would have been most useful (interview two). Wendy had used the hall space on only one occasion. She commented that she "never wanted to go back and do another lesson in the hall, [because] it echoed ... that free space, and they [students] just went nuts" (interview two).

Of the fifteen teachers who responded to questionnaire one, eleven indicated that the school attempted to promote health enhancing PA behaviour through applying whole-school community policies and programmes. Three teachers indicated that Stadium School successfully promoted health-enhancing PA. All fifteen teachers felt it was important to deliver PA during the school day. Eight teachers felt that, by including PA in the school day, the students' brains would be stimulated, their learning would be enhanced and academic performance would improve. Others commented on the need to encourage students to be active both in and out of school to help reduce obesity and prevent diseases linked to inactivity, to increase confidence and enhance wellbeing, to develop social skills, and to make them happier and healthier people. Both Gina and Wendy commented that they had noticed that students in the junior school had limited upper-body strength. They were endeavouring to develop this strength by encouraging students to use the monkey bars, and other climbing apparatus in the adventure playground, both during breaks and in class time.

All the teachers surveyed were involved in PA as classroom teachers, with four of these teachers being in charge of organising sporting events, two coordinating school teams, one coaching, and one managing a team. Gordon, who had a management unit to lead PE, had the following responsibilities: organise staff training; manage the PE shed including purchasing equipment; run whole school sports events (touch, swimming, athletics, cross-country); write school sports newsletter, and provide resources for teachers. Gordon was also the lead teacher for the PAI. One other teacher assisted Gordon in this role.

Curricular physical activity

Prior to the school's involvement in the PAI, classes were involved in PE (called a skills session by some teachers) as well as fitness and tabloids. Individual teachers

chose when their students were involved in PA, although three teachers thought that it was timetabled. Table 5 shows an example of the PA opportunities, offered by four of the teachers.

Table 5 PA opportunities provided by interviewed teachers

Gordon	Honor	Gina	Wendy
PE 20-40mins (2x Wk)	PE 20-40mins (1-2x Wk)	PE 20-40mins (2x Wk)	Skills 20-40mins (2x Wk)
	Fitness Everyday	Fitness Twice a week	Fitness 10mins (3x Wk)
	Tabloids Sport Once a week	Syndicate Tabloids Once a week	Syndicate Tabloids Once a fortnight
			Remedial Skill Session Individual students, when needed

Wendy offered remedial sessions to individual students in her class who were falling behind other students. The students would complete a motor skill and this was recorded, providing an opportunity for the student to “see what they are doing wrong” and then have an opportunity to correct their mistake (Wendy, interview one). Honor had an extensive list in her questionnaire about what she offered the students, and she commented that:

In the junior school I find our main focus is reading, writing and maths, and not PE. I will admit [that] ... this term, when I made a bigger effort, if I made time it happened, but it was not planned for. (Honor, interview one)

Gordon “sporadically” involved his class in PA, however, he was aware that he could do more (interview one). Gina was hesitant about teaching PE, because she was not confident about teaching certain aspects mentioned in the long-term plan. She recognised that “just going and playing a game isn’t good enough,” but felt that she did not have the skills to do anything different (Gina, interview one).

PHYSICAL EDUCATION (SKILLS SESSIONS)

The teachers were required to follow the school HPE programme that outlined their teaching topics. These were: swimming and aquatics, athletics (run, jump, throw), cross country, small ball and large ball skills, dance (folk dancing), games, gymnastics, as well as summer and winter sports (including hockey, soccer, rugby, basketball,

touch, netball, volleyball. Two teachers, when teaching these topics, helped the students develop positive attitudes towards others by encouraging cooperation and other social skills, teamwork and setting goals. All teachers mentioned that they completed assessments on students' motor skill levels; eleven assessed social skills and eleven assessed participation. Effort, and to a lesser degree, fitness were assessed. The elements common to all the teachers' PE lessons were, warm-ups, skill teaching and practices, warm downs, stretching, and cool downs. One teacher observed, gave feedback and demonstrated particular actions as part of this sequence.

SCHOOL AND SYNDICATE SPORT/TABLOIDS

Each syndicate decided how it would organise sport, but across the syndicates, it mainly consisted of games between, or amongst the classes. Each teacher in the syndicate took responsibility for delivering one sport, or in the case of athletics, one event. Gina commented that the focus was on "fun, but, [also], still actually teaching them [the students] something through the game" (interview one). Honor found this time difficult with her more "competitive and feisty boys", and she had to ensure they were spread around the groups, as they were not good at working together, or being told what to do by others (interview one).

The school also held athletics, cross-country and swimming competitions each year, and all students had to participate. The top performers in each event had the opportunity to compete in the regional interschool and catholic school events.

FITNESS

PE monitors, from a senior class, set up a fitness circuit each morning on the grass area between two classroom blocks. Teachers then could take their students out at any stage during the day. The circuit consisted of running through, over and around objects. The syndicate that Honor worked in completed this together just before morning break every day, while Wendy completed it "every day before writing [so as to] get their brain going" (Wendy, interview one).

On wet days, the four teachers who were interviewed commented that they did not do their regular programme. For Wendy this meant, "PE went on the back burner," or they did some exercises in the classroom. Honor had once tried the hall on a wet day, but found it easier to just not do anything that day (interview one).

Co-curricular physical activity

BREAK TIMES

The Parent Teacher Association (PTA) had allocated each class \$100 at the beginning of the year to purchase equipment that was to be used for physical activities at break times. Each class chose their own equipment. The teachers interviewed, commented that if it was to happen again in 2007 they would purchase different equipment to supplement their existing range. The students had access to this equipment and could use it in the adventure playgrounds and field space during break times. Students, in previous years, had access to the PE gear shed. However, due to the large amount of equipment lost or damaged, this was no longer available.

SPORTS TEAMS

Stadium School had a range of sports teams that students could be involved in, including junior netball and junior soccer. Gina commented that the Principal had made the point that teachers do enough during the week, and she did not expect them to organise sports teams. Instead, parents or local sports clubs ran the sports teams and dance groups. Students were often involved in practices for these sports during break times, and immediately after school, however, after-school practices were limited, because many of the students involved in teams were bus students.

THE PHYSICAL ACTIVITY INITIATIVE

Stadium School, developed its charter objectives for 2006 at the end of 2005, and established physical activity (PA) as a priority. The acting Principal commented in interview one, that the new national education goal (NEG) and national achievement goal (NAG) relating to PE, focused on motor skills and PA, and the school felt that it was an appropriate time to engage in the PD involved with Model 2 of the PAI.

Gordon and the Acting Principal (previously the Deputy Principal) attended the cluster workshops run by SSS, initially in conjunction with the RST. When the Deputy Principal became the Acting Principal, she was unable to attend some external cluster workshops, which left Gordon as the only attendee. A group of teachers came together to support Gordon in his role as lead teacher. Gordon, and one of support group teachers, who had been responsible for PE in the past, attended the Active Schools Toolkit training, and later gave a presentation to the staff. This teacher had

also disseminated the information about the toolkit. The bag of sports gear given to each school at the Toolkit training was used to supplement the sports equipment that the PTA had funded for each class. Gordon was not clear what the respective roles of the RST and SSS were, but he felt these two groups were confused about which group was responsible for delivering different aspects of the PD. He decided that it was inappropriate to seek additional PD from the RST during 2006. Gordon's confusion is detailed in the PD and facilitation section of this case study.

Gordon had attended the cluster workshops run by SSS and helped the SSS Adviser deliver PD to the teachers using a staff-meeting format. They demonstrated some activities that may be used within curriculum time to address particular learning intentions. They also explored with the teachers broader aspects of the school's HPE curriculum, as well as quality teaching and learning approaches in PE. Staff commented that they had mainly focused on quality teaching, and detailed lesson planning, including the development of learning intentions and questioning techniques. The SSS Adviser had used the *Moving in Context* series to help staff explore a more thematic approach, as opposed to a sport-specific approach, to teaching PE.

Four teachers were selected to be observed teaching PE, and receive feedback on their teaching from the adviser. The same teachers were interviewed for the evaluative research.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE OF PHYSICAL ACTIVITY (CURRICULAR AND CO-CURRICULAR)

More than ninety percent of the teachers at Stadium school, prior to the PAI, understood PA as an opportunity for bodily movement that involves physical effort, including play, games, sport, dance and cultural activities. The PD associated with the PAI did not appear to change the teachers' understanding of PA, although some teachers now viewed PA as something that happened more in co-curricular settings, and was more student driven.

A shifting view of PA translated into a change in the way some teachers understood PE. Before 2006, teachers understood that PE was planned, taught, and focused mainly on the development of physical skills and technique. Only three teachers

identified PE as addressing learning intentions and HPENZC. After the PD experience some teachers had a broader understanding of PE. For example, Gordon and Gina had recognised that PE could provide opportunities for students' cooperative exploration of problem solving, rather than only focusing on individual sport-specific skills. Gordon now understood that planning for PE lessons was as important as any other subject, and not a subject he could treat casually.

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

The teachers' understanding of the knowledge and skills of PE had appeared to shift. The teacher's inclusion of learning intentions that outlined specific skills for their PE lessons appeared to have been the most noticeable change.

Learning Intentions

All teachers identified that the PD had helped them recognise the importance of including learning intentions in their lessons, both as a precursor to the lesson and as a point for lesson reflection. For example, in response to the second questionnaire one teacher wrote, "I start with sharing a learning intention [and] finish with recapping what we learnt". Another wrote, "I am focusing more on the learning intentions and how to [attain] them [as well as] talking to the students about why I want to teach them these things. A third wrote. "I will now use a card with the aim of the lesson for the children to see, focus on, and reflect on."

Wendy commented that she had always had learning intentions in her PE lessons, however, Gordon noted that he had used learning intentions in other subjects, but had not transferred this teaching idea to PE until the SSS Adviser had suggested it.

Skill-specific learning

All teachers commented on the broader approach to PE they had adopted by exploring using motor skills as a focus, rather than focusing on a particular sport. This had encouraged teachers to explore loco motor, non-loco motor and manipulative skills with their students. For example, Wendy was looking to teach a unit on balancing, using both the model lesson the adviser had provided, and a series of cards someone from her syndicate had developed. Gina reflected that change to a more thematic approach to movement education, would provide direction for the entire year's programme:

The SSS Adviser had focused a lot on loco motor, non-loco motor and manipulative [ideas]. That is what we should be focusing on, [completing] a term on loco-motor, and that is all movement,[then] non loco-motor is a lot of the gymnastics, balance ... and then, the manipulative [material], that is three terms, and then a fourth term, you could consolidate it. (Gina, interview two)

Gina recognised that, while she felt that this alternative approach to PE was more relevant for the junior students than the traditional sport-specific programme, she was not convinced that other teachers were as willing to try it. She suggested that it would require one teacher to do all the planning, and take on a leadership role in her syndicate, to change the teachers' practice.

Gordon was not convinced that all teachers had actually trialled this alternative approach, or had a "true understanding of what it all means" (interview two). He recognised that some teachers had improved, but he suggested that there would be more PD required before he saw a significant change in practice.

Isolated incidents of teacher change

As lead teacher, Gordon felt that he was given opportunities to develop a deeper understanding of the PD content, while other teachers had less exposure to new ideas. Gordon had been the only teacher from the school attending the cluster workshops, and this had at times, left him feeling isolated as a learner. As the year progressed Gordon had worked more closely with Gina in a buddy system to support each other's learning. Gina was, through Gordon, able to learn more from the PD experience, and Gordon had someone with whom he could discuss ideas. The way in which they taught PE had been modified by using ability groupings, appropriate student questioning, and being less teacher directed. These modifications are now examined:

- Less teacher directed

Gordon and Gina had felt challenged by taking less of a teacher-directed approach. Gordon, because giving ownership of the lesson over to the students did not seem to come naturally to him, and he perceived himself to be quite a directive teacher, while Gina was not confident with her knowledge and understanding of PE. Gina felt that a more student-centred approach gave the students the freedom to explore, and to be challenged, without her being so controlling and 'me-orientated'. Gordon felt the student-centred approach had been positive, because he had moved away from delivering drills (in which

he had tried to encourage student to perfect techniques), toward a broader focus on learning, in and through movement, with the students participating, making decisions and taking ownership.

- Ability grouping

Gina and Gordon had both learnt about the importance of ability grouping students for PE. The use of ability groups had allowed them to focus on working with students at different levels. This had enabled them to provide more support to students who were experiencing difficulties, while also extending the more advanced students. They felt that this approach had provided them with better opportunities to address the individual learning needs of the students, and had created a more positive and supportive environment for PE lessons. Gina suggested:

It is just like reading. You get reading books that suit the [students] level, well it is the same with PE, because there are twenty seven individuals, everyone is different, and they [the students] ... if there is some that need [help] a little bit more, then they get that little bit more. And even pairing them with people that are the same level [as] them so that they are working together ... There is no point having someone that [can] catch and throw perfectly every time with someone that is really scared of the ball, because it is not going to create anything. So actually knowing where they are at, and whom they are going to be working with, is a big difference than just [saying], 'right, get together'. (Gina, interview two)

- Questioning

Gina and Gordon had worked to develop their questioning within their lessons, and included a series of questions within their lesson plans as triggers to stimulate discussion. At times, Gordon felt that his approach to questioning was quite “strained and phony” as he was not used to developing questioning in the PE context, and not always sure of what questions to ask. Gina used questioning to provide opportunities to focus her students on what they were learning, rather than the students just going out, and ‘doing’. Both teachers had first started trialing questioning while experimenting with a game-centred approach, a version of TGfU, which the adviser had demonstrated during the observed lesson.

The PD had provided Gina and Gordon with a range of ideas and inspiration for teaching PE. However, they both expressed disappointment that it was only they, and

possibly two other teachers who had benefited from the PD. However, the acting Principal reported that she had observed other teachers using ability grouping, and smaller groups in their teaching of PE.

COMPETENCE, MOTIVATION AND CONFIDENCE

Teaching physical education

Five of the teachers reported feeling more confident teaching PE after the PD. Teacher 50 had “more idea about ‘what’ and ‘how’ things in PE should be taught”, and received “more knowledge about the subject area.” Wendy wrote that they had received “support from their syndicates” (questionnaire two).

Gordon commented that he had initially had trouble with the new version of PE, as it had affected his self-confidence. However, he found that later on there had been a “spark, that lights, that clicks” and he thought, “I can do it, I have the confidence to do it” (interview two), and so by the end of the PD, he was feeling better about his competence and confidence.

Gina experienced the most apparent shift in confidence. During interview one, she had commented that she was not good at teaching PE, but felt that she had to do it, as it was part of the curriculum. A lack of knowledge and personal confidence in movement skills appeared to constrain Gina’s confidence in her ability to teach PE. However, because of the PD, Gina was now more prepared and confident when teaching PE. She was even contemplating taking on a leadership role within her syndicate in order to assist other teachers adopt what she perceived as a more relevant version of PE.

During Gordon’s and Gina’s lessons they were observed trialling a games-centred approach, as well as using questioning, and ability groups. Both demonstrated the ability to develop questions that were appropriate to the learning intentions, and the ability of the students. Gordon also had a series of questions, within his lesson plan, to provide him with some guidance. In comparison, Wendy delivered a more traditional teacher-directed lesson, but later mentioned that she would be trying some more innovative ideas next time she took the class for PE, using ideas she had gathered at the staff meetings.

Offering co-curricular physical activity

Co-curricular PA was not a focus of the PD that the teachers received at the school. Senior management did not expect the teachers to be involved in co-curricular activity; therefore, there was not an observable change as a result of the PD. Gina, however, commented that she felt more confident about being involved in co-curricular PA, and had become more willing to join in activities with her students during break times.

MOVEMENT SKILL DEVELOPMENT

Determining student progress

The focus on movement skills had provided the teachers at Stadium to an approach to explore alternative ways to development students' movement skills, however it had not focuses on techniques to monitor student progress. Therefore, teachers appear have continued using the practices they had before the PD. The use of learning intentions had provided teachers with opportunities to reflect on learning with their students after the lesson, and this provided some information about some students' progress, however this was not often recorded.

Teachers also reported using some peer and self-assessment techniques to help them monitor students' ability, if not progress. Wendy and Gordon, who had more experience with physical activity and had been involved in coaching used subjective judgements, and some simple pre and post skills tests to monitor student movement skill development and then corrected student technique. Other teachers also reported using observations and some pre and post testing strategies to monitor student progress, as they had before the PD.

Evidence of contribution of physical education

The Acting Principal did not feel there had been any focus within the PD programme, on monitoring how PE contributed to the development of student motor skills.

We also wanted to have something we could measure our [students] against. How will we know we have done something [right] unless we have a start point? In the end we got sick of waiting for that to come, [so] we did it ourselves! (Acting Principal interview)

PA was an important strategic goal of the school, and it wanted to measure to what extent PE would improve students' physical skills and their attitude towards participation. The SSS Adviser had not dealt with this aspect in the PD, so the school

had developed their own series of tests focused on throwing and attitudes toward participation. The tests indicated that the majority of the students' throwing skills had improved during the year, and there was an improvement in attitude towards participation. The Acting Principal suggested that teachers had not changed their programmes significantly, to bring about this improvement, but the overall focus on PE had encouraged more teachers to teach PE regularly.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

Teachers at Stadium School had begun to explore links between student achievement and achievement objectives, because of their involvement in the PD. It was observable that some teachers, in developing learning intentions for lessons had also begun to explore the achievement objectives from HPENZC. Using the model lessons they had received from the SSS Adviser, and integrating these with the activities in *Moving in Context*, which are linked to the HPENZC achievement objectives, teachers had begun to identify which achievement objectives students were working on. While the teachers had begun to develop an understanding of the achievement objectives, there was no evidence of teachers recording student progress in relation to these.

The only evidence of teachers linking student achievement to different levels results, related to the skills testing that the school had designed and run as a way to monitor the impact of the PD on student achievement. These tests were designed after teacher discussions had taken place regarding their expectations about students' throwing ability. Students were all pre and post-tested, and their progress was recorded. The school reported that the SSS Adviser did not support their initiative.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

It was evident from the teacher, student, and parent comments that the teachers' involvement in the PD had enhanced student achievement. Teachers reported that, because they had made changes in the way they structured their lesson they had observed a shift in attitude of some students towards their participation in PA.

I see the benefits to the children and ... a creativeness, and the challenges you can put [in front of] the children, and ... they have buzzed many times. And they buzz more ... because I think they are

really enjoying it ... and they are better at it ... and not worrying about a particular skill ... so many more are involved in the activities that we are doing ... They get personal skills, manipulative skills, and attitudes, hopefully they are going to hold [these] for the rest of their life ... just enjoyment, satisfaction, teamwork, and encouragement (Gordon, interview two).

Teachers at Stadium had felt that the majority of their students already had a positive attitude toward PA, but some felt less confident, and therefore did not always get involved. Following the PD, the teachers said that the students had become less 'threatened' by PA, they really enjoyed it 'now', looked forward to it each time, and were more confident, and better at supporting each other during PA sessions.

The students are learning more about why I am teaching, and the steps [needed] to gain the skill, and therefore [they] are more focused and less worried about not being able to do it the right way. (Gina, interview two).

The students also were positive about being involved in physical activities. They reported being physically active at break times, and having fun in their PE lessons. The senior students in Gordon's class commented that the way Gordon ran PE lessons was different from what they had experienced in the previous six years at the school.

Other teachers just ... make you run around the court, but the games, [which they did with Gordon], make it fun" (Eliza, Year 7&8).

They had also been able to make up their own games, which they appreciated, and had found that the games approach meant they were more encouraging of each other, even of students they had not usually got along with. They felt safe, especially working in smaller groups and felt more confident.

Maybe [it is] because of the way he is teaching ... with the game it makes you feel more comfortable with [PE] (Rosie, Year 8).

A change to the structure of PE lessons appears to have had an impact on student participation. The teachers reported, for example, that some of the reluctant and less confident students had become more involved, that the students who would usually have made an excuse not to join in, had felt safe; and that some games were no longer so competitive, and therefore more students had participated.

Students in the three groups interviewed all commented that they had enjoyed PA with the class, and that most students in the class had participated. However, students also commented that they had not always been able to participate in PE, especially if it was wet or they did not bring their PE gear to school; which limited the opportunities they

had to be active. Each class had different timetables for curricular PA. Wendy's Year 3-4 class, did not have PE very often, but managed to do fitness three times per week. Gina's students commented, "We really have not been having PE ... that is the only time we have [had a class] this term" (Roberta, Year 2), but "we did heaps last term" (Skipper). One of Gordon's students commented, "If you do not bring [your] gear you do not participate, as [Gordon] does not want us getting our school clothes dirty ... We do not really learn much when we are not participating."

The school's monitoring of throwing skills indicated that all students had improved in this area, despite it not being a dominant focus within lessons. Wendy's and Gina's students all commented that they had become better at throwing. Parents indicated that their children had been learning ball skills, fitness, different ways to move, and sports skills in PE lessons. At the school, it was not clear how the PD had improved the students' knowledge about PA, because there had not been a greater focus placed on assessing student development of movement skills.

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

During the PD programme, there had been a focus on movement skill development, loco motor, non-loco motor, and manipulative, however, there was little evidence on how this had influenced the students engagement in extra curricular activity. The teachers at the school were not involved in extra curricular activity; therefore, this was not monitored. Students commented about being involved in extra curricular activities outside of the school day, and nearly 80 percent of parents felt that their children's movement skills had improved throughout 2006. While some parents felt this was because their children were maturing, more than half felt that this was contributable to the school having adopted a broader focus on PA, that is, the students had more opportunities to be active during the school day, including breaks and within class.

Professional development and facilitation

Stadium School had trouble with the facilitation and delivery of the PD programme, nevertheless, they had benefited from being involved. During the initial phase of the PAI, the SSS Adviser had asked the teachers to complete a survey that aimed to gauge their understanding of their ability to teach PE, and their knowledge of the school's HPE curriculum. Some staff, including Wendy, were annoyed that they had to identify themselves on the survey, because this had made them feel judged. This may

not have helped build a positive relationship between the Adviser and some staff. It was clear that Gordon and the Acting Principal were frustrated with the PD, and the relationship between SSS and the RST.

I feel we spent so much time trying to work out ... [but] I am not criticising them [the advisers] either ... when they were floundering. The minister said 'we need to do this ... let us rush in with these contracts and away we go.' There seemed to be a tension between the RST [material] and [the] SSS [material]. Where as, we thought there would be more of them working on their own [material], but more hand in hand. (Acting Principal, interview one)

Gordon had worked through his frustration with the situation and moved on. He made this point:

There was rather ... conflict ... political ... on who delivers what concepts. I did not know who to ask, what to wait for, or when to do something. I tried to initiate things, but then I ... just waved a white flag and said, "Right, this in-service will make it clear, so just let it happen." I stopped doing active things really, and just absorbed ... which was probably a good move in the end. (Gordon, interview two)

Participation in PA had been set as a strategic goal for the school, and this meant that the senior managers were accountable for showing progress in this goal. The managers, however, were not clear about how to monitor the progress of their teachers and students and had requested support from the PD adviser for this. They reported being told that this would be addressed at the end of the PD programme, which would not have suited the school's needs. Feeling unsupported they had developed their own monitoring programme.

There was some disappointment, in the school, that only four of the staff had lessons observed and received some form of feedback from the adviser. Gina and Gordon felt that if more of the teachers had been involved in this aspect of the PD, then teachers would have felt more responsibility to engage in the PD, and then trialling the ideas shared at staff meetings. Wendy, who had found the practical parts of the staff meeting useful, felt that "lessons modelled by experts for the teacher to observe" would have been useful.

Teachers reported, in questionnaire two, that there was a range of valuable and enjoyable components to the PD, including:

- Helping teachers to thinking about what students needs in PE might be;
- Useful, fun, and inclusive activities that could be transferred to the classroom;

- Activities to teach the loco motor, non-loco motor and manipulative skills;
- Ideas on how to structure a lesson with clear learning intentions; and
- The provision of knowledge about many valuable lesson ideas, obtainable from the SPARC website.

Most teachers at Stadium School enjoyed their PD experience, commenting particularly on how much they had enjoyed the practical activities that they had engaged in during the staff meetings. Wendy commented that she had participated in a lesson given by the adviser at a staff meeting, that she planned on trialling with her class the next day. She had realised that the lessons she experienced were easy to just pick up and use in her class (Wendy, interview two).

The teachers in general, commented that they needed more time to work through the ideas presented at the staff meetings, and then trial the activities with their classes. Gordon felt that the PD “was [organised] done completely the wrong way [round]. I should have had this year to learn [about PE] it, and to understand it and develop myself, and then promote it next year” (interview two).

Physical activity culture

Model 2 of the PAI provided by the SSS did not enable the teachers at Stadium School to explore its PA culture, except where it pertained to the development of teaching and learning programmes, and practices in curricular PA. From the evidence available, it is not clear that the PD programme included opportunities for the teachers to examine the school’s ethos and organisation; co-curricular programmes; the environment; or community partnerships, and therefore gain an understanding of the fuller concept of a physical activity culture. Some parents were aware of changes made to curriculum PE, with over twenty-five percent of parents identifying that the teachers had increased the amount of time they allocated to PA and more specifically, PE lessons.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

The Acting Principal commented that they were not developing policy and programme development, until the New Zealand Curriculum (in draft 2006) was finalised. However, Stadium School was committed to providing a positive environment for their students to learn and play in. In order to ensure this continued, the school was committed to

creating positive PA experiences for students. They recognised that there were important factors that currently supported a positive PA culture including:

- Committing time and money to up-skill teachers through PD opportunities;
- Support from the PTA, to provide PA equipment for each class;
- Providing positive and inclusive PA opportunities;
- Providing well maintained grassed areas that can be used for class activity, and at break times; and
- Delivering policy and teaching programmes that meet the learning needs of their students.

The teachers identified some factors that constrained PA opportunities within the school, including: the lack of a regular large indoor space for PA; the possibility of losing the smaller grass area to classrooms as the school roll increased; and the loss of the school pool.

CHANGE PROCESSES AND FUTURE STRATEGIES

Stadium School had a difficult year in 2006, as unforeseen circumstances had affected the whole school community. This had affected the school's ability to be fully involved with the PAI. The loss of their Principal meant that the Deputy Principal became the Acting Principal and could no longer attend the cluster meetings with Gordon. This left Gordon as the only teacher able to attend the entire PD programme. He commented during interview two, that this had put him under strain, and he that would have preferred to have had a year to learn and understand everything himself, before professionally developing the other teachers in 2007. Nevertheless, the teachers commented that Gordon had been particularly supportive, by providing many ideas, as well as encouraging them to try new things. As the year progressed, Gordon had formed an alliance with Gina, which had provided him with some support, and allowed them both to exchange ideas, relating to their teaching of PE.

Factors that may have prevented some of the teachers from making more progress during the PD were, first, four teachers, Gina, Wendy, Honor, and Gordon received additional support from the adviser, while the other eleven teachers only attended the PD provided in staff meetings. Second, Gordon was the only teacher expected to support teacher development across the school. Third, some teachers regarded PE as a lower priority, and this may have influenced their opportunities and desire to prioritise

trailing new activities in PE. Fourth, because the school did not have an indoor activity space, most teachers did not teach PE, or any form of PA, on days when the weather was inclement. Gina, who was motivated by the PD, mentioned factors that restricted the time she could commit to PE:

We have not [had] PE much because of [the] production, and so this is the first time, in a couple of weeks, that we have [had] it ... You know, three afternoons a week [for the production], you just do not have time. You cannot fit maths in, let alone PE ... I try to get out there with the fitness and activities, but ... it has been hard this term (Gina. interview two).

Gordon and the Acting Principal commented that they had teachers in a “tough” syndicate who were unwilling to change their programme or practices, and that it would take longer than one year to make a difference for this group. This syndicate had continued to offer fitness everyday, sometimes as an alternative to PE. Gina commented that she did not think the changes were sustainable:

... because there is still lot of negativity about it, and you cannot sustain something [when] there is negativity, and people are not willing to make the time for it ... the whole point of what the project's been about (Gina, interview two).

In order to sustain and enhance progress that had been made during 2006, the teachers with Gordon had identified a range of strategies Stadium school would need to explore and possibly adopt in 2007. These included:

- On-going PD consisting of ideas for new activities;
- Physical skill sessions where teachers can develop their own movement skills;
- Lesson guidelines to help teachers start their own;
- The possible delivery of lessons by experts within the school, observed by teachers;
- Building expectations about quality teaching of PE into the appraisal cycle; and
- Working towards enhancing parental involvement, and senior student involvement in running co-curricular activity.

Gordon offered this strategy as well:

[There should be] one person, at least, from each syndicate [to provide the PD] and, [where] I am the support person, these leads from each

syndicate teach their syndicates in staff meeting time, and hit it properly” (Gordon, interview two).

STADIUM SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Teachers needed more time to reflect on learning and developing their practice;
2. More teachers needed to have a wider range of opportunities to be involved in PD, in order to create sustained change across the school;
3. The Model 2 PD programme, did not appear to be responsive to the needs of the school;
4. Teachers had the opportunity to develop general pedagogical knowledge at what appeared to be the expense of pedagogical content knowledge. This appears to have limited the development of teacher content and curriculum knowledge;
5. There was confusion about the role of SSS and the RST and their relationship with the school.

CASE STUDY SEVEN: WATERFALL SCHOOL

Waterfall School 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 Rūmaki 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, all aged between 36-56 years old, with three having less than ten years teaching experience and the other two having taught for more than eleven years. In 2006, the Principal was on leave and one of the senior teachers was Acting Principal; she was to return to the classroom as teaching Deputy Principal in 2007.

Of these five teachers, four completed the first questionnaire. Three teachers who completed the post-intervention questionnaire are referred to in this case study as, Haley, Oprah and Petra. They were also interviewed twice, and were observed teaching. For this case study, the teachers selected represented each of the junior, middle and senior syndicates. Haley taught the New Entrant, Year 1-2 class, Oprah a first-year teacher, taught the Year 3-4 class, and Petra, the Year 7&8 class. Students from these three classes were interviewed and the students' parents were sent questionnaires. The parent response rate from Waterfall School was 55%.

With the exception of one, all teachers at Waterfall School had had some previous PD focused on PA. The focus of their previous PD ranged from planning for and teaching PE as a classroom teacher, being a lead teacher of PA/PE, personal skill development, to facilitating school-wide PA opportunities. Two teachers had also undertaken other PD relating to the coaching of specific sports. This PD had not been school related but linked to their interest and involvement in particular sports.

Petra had been on KiwiSport starter courses, an RST course on different sports, and a Swim Safe course; she had not had any training on HPENZC. Haley perceived herself as an expert in delivering both curricular and co-curricular PA, as she had worked as an aerobics instructor for a number of years before undertaking her teacher education course, so drew heavily on her instructing years in her delivery of PA. Oprah enjoyed PA and had some confidence, yet highlighted that her "size and fitness level inhibited/restricted me [her] from being an expert" (questionnaire one). Nonetheless, she reflected on the "very good" training she had recently received as part of the

teacher education programme, which allowed her to have a comprehensive understanding of PE.

In 2006, Waterfall School was also still involved in the Numeracy contract, aspects of a literacy contract, and had a big push on formative assessment and using eTAP²⁰ for their planning.

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

Waterfall School was in a quiet rural settlement close to an expansive lake. The school's physical environment provided a range of spaces that children could access to be physically active, including an adventure playground, court spaces, and a large playing field. Three of the four teachers, who completed the first questionnaire, felt the school attempted to promote health-enhancing PA behaviours through whole-school policies and programmes. Petra commented that the programme worked well for the large majority of students, as the majority of students at Waterfall School already had well-developed motor skills. Students were "all really active kids ... big Māori kids, but they are really sporting kids" (Petra, interview one). "They are really good at encouraging each other to join into their games ... and there is no child who is reluctant to join in" (Oprah, interview one). Both Petra and Haley commented about student underachievement in other areas, and how the school needed to prioritise numeracy and literacy to address the needs of the students. Petra was the curriculum leader for PE in the school and took responsibility for overseeing the organisation of sporting events. Oprah was involved as coach and manager of sports teams. Other teachers supported PA, but did not take an active role to contribute beyond their role as a classroom teacher.

Curricular physical activity

PHYSICAL EDUCATION

The school programme consisted of aquatics (term one), cross-country (term two), winter sports activities (term three), and athletics (term four). Aquatic education was a particularly important focus given the proximity of the lake. All teachers recognised that

²⁰ eTAP is a software programme that links to national curriculum documents on the Internet. Used for teaching, planning and assessment in New Zealand primary and intermediate schools.

they had to teach and assess two PE units, related back to the curriculum in a year. In the first interviews, Oprah and Petra stated that they did not think this was adequate. They recognised that, in theory they were expected to teach across all curriculum strands, but that the programme only addressed Strand B – Movement Concepts and Motor Skills. The programme and assessment focused on developing specific skills appropriate for a particular code, and was seasonally based.

Haley commented, “I feel confident using the curriculum document, because I like music, dance, drama and I can integrate PE into my literacy and maths” (interview one). For example, with her Year 1-2 class she would have them bounce the ball to the alphabet or as they counted. She also delivered PE lessons that consisted of skills and games. At the time of the first interview, Haley’s focus was on netball throwing and soccer, and she used games to develop these skills. She stated, “As long as they can pass a rugby ball correctly then I would be happy to send them on to the next year.”

FITNESS

Haley, having had over six years as an aerobics instructor, placed high importance on a fitness programme. Her Year 1-2 class completed a daily fitness circuit, including running, skipping, star jumps, tennis ball throws, etc. She “wanted to set it up so that all classes did it!” (interview one). Petra was also doing a fitness unit every morning during term one, using activities from the *KiwiDex* manual. Neither of the other two teachers indicated that they did daily fitness, although all teachers assessed fitness using a battery of tests, with the intention of re-measuring the students later in the year.

INCIDENTALS

All teachers indicated that they took students out for games, activities or “brain breaks” (Haley, interview one) during the day. For Oprah this usually occurred in the last twenty minutes of the day, while Haley had students go out for a quick run during reading time as a way to get them to release energy and be more prepared for learning.

Co-curricular physical activity

SPORTS TEAMS

In her first interview Petra talked about how the school community did not have a lot of money. Both Oprah and Petra suggested that playing sport outside of school had become expensive (hockey \$90, netball \$250 per team) and students would not play if they had to pay the full amount. As an example, Petra talked of the student who said, “My dad said I can play hockey if I can get a ride in [to the closest main centre].” As a result, the school had set a flat rate of \$10 and then fundraised the rest of the entry fee. They did this through cake stalls, raffles, sausage sizzles, sponsored cross-country, and Wednesday ice-cream sales. Petra did not think that parents were overly supportive, with transport, etc. for extra-curricular sport that was offered by the school. Teachers took students to town for games, but after being used to bringing them back again, had insisted that parents now pick them up. Petra said that they did this “because we didn’t want our kids to miss out on opportunities, and therefore we have done more than we should, and have been taken for granted” (Petra, interview one).

Waterfall School had a limited number of students so this restricted the number of teams they could offer. In 2006, Waterfall School offered three netball teams (one was combined with another school) and for the first time there were parent coaches, Petra was surprised and pleased by this development. In summer, they would usually have softball, but the softball association had been too slow at getting organised, so they had put a cricket team in instead. This was a non-traditional sport for the school and the high Māori student population had not experienced it much. Nevertheless, according to Petra, students had adapted and were flourishing at the game. In previous years, there had been a parent that was a New Zealand softball representative, who had supported the game in the school, with gear and coaching. His child had moved and the support for softball had lapsed, which had contributed to their decision to change to cricket.

BREAK TIMES

Petra indicated that the students were “active kids” who demanded gear at breaks. The school had a sports box for break times, including elastics, ropes, balls, etc. Gear was heavily used, and often got broken or wore out. Break times induced a race to get gear, with groups of all ages playing together.

We always moan because we go through so much gear ... sometimes we resist buying more because it's like a bottomless pit. But then I came back here [after the introductory workshop] and said like that's a sign of a really good active school, we decided that we would always be maintaining/replacing gear (Petra, interview one).

Waterfall School had a bag of equipment from the Active Schools Toolkit, and planned to get one for each class, along with a set of skipping ropes and tennis balls per class. There was a good budget for equipment but Petra, as the budget holder, was holding off buying new equipment until she saw what they got from the PAI contract, and what new needs they might have.

INTER-HOUSE/INTER-CLASS

Sometimes teachers organised inter-house competitions; mini-soccer, T-Ball, rugby etc, that were held during lunchtimes, for the middle and senior school students. Haley was disappointed that there was no school sport for her Year 1-2 students. She hoped to start some competitions with the Rümaki class, as she felt that the other teachers were not interested in inter-class games. To compensate for the lack of inter-class physical activities, Haley had competitions within her room, where students played against each other to develop skills and a positive competitive nature.

THE PHYSICAL ACTIVITY INITIATIVE

Waterfall School signed up to be involved in Model 2 early in 2006, after one of the teachers attended an introductory workshop at the end of 2005. Petra was identified as the teacher to lead the school in the PD, but due to poor communication, she did not get to the first cluster workshop. After that, Petra had attended all the cluster workshops, and found that they challenged her to think and she found that she had “taken on board a lot about quality teaching practice and applying it to PE” (interview one).

The major focus of the PD at Waterfall School was on quality teaching in PE. At the second cluster workshop Petra looked at quality teaching, and after discussion with the SSS Adviser it was decided that this would be the area the lead teacher would focus on with the other staff, as this was something she was clear about. Staff, other than the lead teacher Petra, had been involved in one whole-school staff meeting, run by the SSS advisory late in term one. This focused on quality teaching and included feedback, feed-forward, questioning, using discussion and sharing learning intentions.

This staff meeting, although they all commented that it was a lot of “talk, talk, talk” had made them see “PE teaching more in line with teaching other subjects” (Petra, interview one). During term two, Haley, Petra and Oprah had one lesson each observed by the SSS Adviser, who took notes and then talked with each of them about the lesson. She offered advice to improve teaching practice.

To support staff in the times when the adviser was not working with them, Petra ensured that they had learning conversations after staff meetings. This allowed teachers to get a continued sense of what they were doing. The Rümaki teacher and one classroom teacher were not part of the PAI programme, so the regular conversations allowed them to hear what was going on.

One teacher also attended the Active Schools Toolkit training run by the RST, but had not had any further support with this during 2006. Some staff from the RST had been in to run sports sessions for up-skilling staff in particular sporting codes.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

In reviewing teacher responses to both questionnaires, there did not appear to have been any conceptual shift in teachers’ understanding of PA or PE. In both questionnaires, teachers identified PE as a broader term that covered any activity that involved bodily movements, from sports and games to recreational activities such as gardening. Teachers felt that PA occurred in a range of settings in and outside of school, and was done during break times in the school setting. Before the PD, teachers at Waterfall School saw PE as being:

- The teaching of body movements/balance/coordination skills strategies, leadership, teamsmanship and to be an active team member or individual who can apply these things to any sports code (Haley).
- Far more specific than PA in that specific outcomes are the focus of all lessons. Curriculum-based. Incorporates not only physical skills but also attitudes and values, and processes. Outcomes are measured, closely assessed and evaluated (Oprah).

- Being active often on a daily basis. To maintain an appropriate level of fitness (Teacher 36).
- Educates children so they have an appreciation of the benefits of regular PA, 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 (Petra).

While conceptual understanding of PE had not changed for the first three teachers listed, Petra had been:

... trying to broaden my view of PE, as preparing them with lifestyle choices for the future” The initiative is about “us improving our delivery of PE and understanding why we are delivering PE ... all connects with the obesity thing – but for me it is about giving lifestyle choices they might make later on in life” (Petra, interview two)

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

At Waterfall School, there were varied impacts of the PD on teachers’ knowledge, understanding and skills in teaching PE. For most teachers an understanding of the need to share learning intentions appears to have been the most important change in their practices within PE. Haley had difficulty recalling having experienced any PD relating to PE, which made it difficult for her to recall any changes that had come about as a result of involvement in Model 2. Conversely, Petra, whose involvement had been more substantial, had experienced a wide range of outcomes, which are detailed in the section titled ‘other impacts for lead teacher’, below.

Learning intentions

It would appear that the PD within the school had focused on aspects of quality teaching, particularly the development of learning intentions. This linked well with the school-wide focus on formative assessment practices, where teachers were consistently reminded to share ‘We are learning to ...’ with the students. Oprah indicated that as a result of the work done with the SSS Advisers she was “always displaying and discussing the learning intentions, and at the end of each session I found it really good reflecting on the lesson, and that’s good because it feeds forward to the next lesson” (interview two). Petra had also found that using learning intentions helped her students reflect on the lessons, therefore reinforcing the learning that had occurred.

Oprah appeared to be less confident developing lesson intentions that catered for her Year 2, 3 and 4 students, commenting in interview two that she had asked her colleagues what level of the curriculum she should be focusing on, and they had suggested level 2, so this was the level at which she pitched her learning intentions. She had then used the eTAP system to assist her in the development of learning intentions. For Oprah, the SSS Adviser's observation of her teaching had reinforced the need to develop and display the learning intentions. Oprah received feedback that instead of writing the learning intentions on the board, she should put them on a laminated sheet, take them out to the lesson and reinforce them with the students.

In contrast to Oprah's lack of confidence, Haley was confident in her ability to develop learning intentions to support student learning. The lesson observed was one from a series of lessons that Haley delivered focused on large ball skills. These learning intentions for the New Entrant and Year 1 students were displayed on the classroom wall:

We will learn:

- *A netball chest pass, holding our hands in a W shape;*
- *A rugby pass standing sideways to throw the ball;*
- *A basketball bounce pass stepping forward as we bounce the ball;
and*
- *A soccer kick using the side of our foot.*

Activities, equipment and resources

Petra, Haley and Oprah recognised that the range of resources they had been exposed to, and made aware of, throughout the PD had allowed them to have a wider range of activities and games that they could use in their PE classes.

The adviser directed me in the resource room, she showed me some really helpful resources, some books that previously I didn't know. I can't tell you the titles of them, but I can see the covers in my head, and she said, "These are really helpful for skipping skills or ..." ... we were doing throwing and catching at the time and that gave me some really good almost a whole unit to follow, and yeah, she was good. She pointed me in the right direction for resources. Yeah, that was really helpful. (Oprah, interview two)

Changes to some of the games they played in PE, had resulted in a need for a wider variety of equipment, such as beanbags, quoits, and tenpins. Petra worked with the SSS Adviser to develop a manipulative skills unit that focused on students throwing a wide range of equipment. She felt that this had been challenging as it had varied for

the use of small or large balls that had previously dominated her PE lessons. Model lessons provided by the adviser, and the activities Petra had learnt at cluster meetings had supported in to develop the manipulative skills unit.

Other impacts for lead teacher

Petra had experienced the same benefits as outlined above, additionally she had been challenged to think more broadly about:

- Quality teaching in PE

In addition to the development and sharing of learning intentions with her students, Petra had been encouraged within the PD to explore questioning and using more student-centred approaches, including a games approach.

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"... "No 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, and it's taught me to give it over to them more... I think that possibly they feel they have a bit more ownership over their PE now. (Petra, interview two)

Petra and the Acting Principal both commented that changes in the approach had meant that PE classes now were more appealing for all students. Of significance to them was the increased participation and confidence demonstrated by one "intellectual" student in the class.

- PE programme development

On reflection, Petra was starting to wonder if their PE programme was solely about preparing students for sports events, both school-based and inter-school. She said "the PE I was delivering in the classroom wasn't really soundly curriculum-based. It reflected the season and what else was going on ... cluster cross-country, etc ... that determined what I taught" (interview one). She felt that the school programme continued to be devoted to preparation for sport competitions and this had resulted in a focus predominantly on Strand B, Achievement Objective 1, of the HPENZC. Petra also commented that the programme that they had at Waterfall School had only assessed developing movement concepts and motor skills, and taking responsibility for regular PA. The acting Principal and Petra recognised a need to explore more about how

the school PE programme assisted student developmental advancement as they moved from year to year. They felt the current plan was repetitive and therefore not developmentally appropriate.

To address some of her concerns, Petra had started to develop a new school PE programme that she intended to work on in conjunction with the SSS Adviser at the end of 2006, for implementation in 2007. Her focus for the planning was student needs, particularly related to aquatics/waters safety, cooperative skills, problem-solving and critical thinking, inclusive PA, and regular PA.

- The place of fitness within, PE and the curricular programme of the school.

Another thing we got wrong, really wrong ... was measuring fitness We did these tests in response to all the stuff from the newspaper, government ... and then that one hour extra-curricular and then also your timetabled PE. (Petra, interview one)

Teachers at Waterfall School had measured student fitness levels through running, but realised, early in the PD that fitness was not a good indicator of PE. However there was some resistance to getting rid of the tests, even though “we [the teaching staff] do not have the skills to measure fitness” (Petra, interview one).

As a result of the PD, Petra had changed her PE programme so that instead of one big PE unit a term and fitness, she now had one PE unit rolling into another one, and the short fitness time had been extended to the dedicated PE time. Petra was committed to not doing fitness, and ensured any focus for events, such as cross-country, was worked into her PE time, which was now referred to as PE rather than fitness. Her aim for 2007 was to reduce the curricular time used for fitness, in other areas of the school, and to ensure that teachers used this additional time for quality PE. She recognised that this might be difficult as some teachers, such as Haley had continued with fitness time, and were committed to it, and other teachers such as Oprah had made “more time for fitness” (Oprah, interview two). While Oprah realised that this was not the same as PE, she felt that it was needed to help students in her class “work off some energy so they can be more focused.”

Teaching physical education

Teachers own perception of their ability appears to have influenced how their competence and confidence developed as a result of the PD. For Petra the PD had generated much confusion. While she had originally felt confident with her ability to teach PE, the cluster meetings had highlighted for her that there was much for her to learn. She indicated that this made her lack confidence in her abilities, but that she was regaining some confidence, as the new knowledge became part of her practices. Petra, who had more involvement in the PD, demonstrated the ability to develop a range of activities that allowed students to explore the learning intentions, and take ownership of the lesson. She recognised that she still had a lot to learn about delivering PE, and that she needed to trust her own judgement about activities, as opposed to simply replicating the activities she had done at cluster meetings. This was evident during Petra's second interview, where she detailed her use of a game called Fivesies, after the adviser had suggested she use it with her class to explore manipulative skills.

This game Fivesies that we got taught at our course, well Fivesies is the most boring game in the world, and it seems to be quite pointless and we struggled with it for two weeks and it's only just testament to their 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 one student said, "It's boring," and I said, "Yeah, it's 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, 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." (Petra, interview two)

While it was apparent that teachers had learnt about using learning intentions and felt confident in their ability to do this, evidence from the observations and documents collected raised some concerns about teachers' ability to develop appropriate learning intentions and associated learning activities. While the observations only provided a snapshot of the planning and teaching process, there were concerns about the appropriateness of both Oprah's and Haley's lessons.

Haley was extremely confident with her ability to teach PE, as she was able to draw on her experiences in sport and as a fitness instructor. She demonstrated her ability to develop learning intentions, outlined above, however the content of her lesson and the nature of the learning intentions was extremely advanced for a New Entrant, Year 1 class. Her lessons, and those within her unit plan involved students in sport-specific games, such as netball with specific rules about 'stepping' and only using chest passes. Her students also commented about learning how to play rugby, and soccer, which supported her comment in interview one about ensuring her students had sport-specific skills, such as being able to pass a rugby ball correctly, before she would feel comfortable moving them on to the next year level.

Oprah identified herself as "very new at teaching," and had developed a clearer understanding of PA and PE through out the PD. The access to resources had provided her with many ideas for teaching and helped her feel more confident about her delivery, particularly in the skipping unit that she had planned and then delivered a lesson from during the research process. However, the observed lesson and the unit plan collected as part of the research process demonstrated that Oprah may have had some difficulty with establishing learning intentions and activities that reflected the level of all of her students. The students demonstrated that the majority of them were already working at a skipping level well above that presented in the learning intentions and in the activities selected. The relevance to students' level of ability, may be a reflection of a lack of understanding of content knowledge for appropriate levels of development, or may be an issue with the planning process.

The use of eTAP as a planning tool appears to have provided teachers at Waterfall School with a simple model of planning, where they could electronically select Achievement Objectives and then design Specific Learning Outcomes, or learning intentions that were reflective of the goal of the unit. However, if teachers do not have the curriculum or content knowledge, eTAP does not appear to support them to develop appropriate, relevant and meaningful content. Petra had recognised the limitations of the eTAP process and valued the model for unit planning that she had been exposed to at cluster meetings, but did not think, given that teachers had spent 2006 learning how to use eTAP, that it was wise to challenge them to use an alternative model.

Offering co-curricular physical activity

The teachers at Waterfall School were motivated to provide co-curricular PA both before and after the PD. Teachers recognised that it was extremely important for their students to have opportunities to be physically active and to participate against other young people in a range of sports. Therefore, they worked diligently to fundraise for sports fees, and equipment, provided coaching, management and transport for school teams. Teachers worked together to organise inter-house and inter-school competitions at lunch times that allowed all students, regardless of level, the opportunity to participate.

The only evidence of a change to teacher motivation and confidence to offer co-curricular activity was from Oprah, who suggested that she had recognised the important responsibility she had in role modelling that people of large physical size can be active and enjoy involvement in PA. Oprah had become personally motivated to be more involved in participating in the activities that were already running as she felt that the students would think “Oh she can do it, well we can do it!” (interview two).

MOVEMENT SKILL DEVELOPMENT

Determining student progress

A focus on movement skill development was not evident in the PD that the teachers at Waterfall School had received. However, the additional school-wide focus on formative assessment had encouraged teachers to use peer and self-assessment with the students, and the use of learning intentions had encouraged teachers to reflect with students on their learning, and therefore provided teachers with support in determining student progress. Teachers indicated that they still used observations as the most common method to monitor student progress, but indicated that they found the reflection at the end of lessons a good way to see if students themselves felt they had progressed.

Evidence of contribution of physical education

Teachers commented that they had not received any explicit PD on how to assess PE and report on it. However, by changing the way they structured their PE lessons, and by incorporating learning intentions, teachers had developed alternative ways to gather evidence of student progress as an outcome of the PD. For example, Haley

had developed a display on her blackboard that highlighted the progress each student was making in relation to the learning intentions. As Figure 2 indicates, that learning was viewed as a series of steps: 1 - can catch a ball, 2 - can throw a ball to a friend, 3 - can call out for the ball, and finally when they had achieved them all, 4 – goal, can pass a ball to a team member and be a cooperative team member.

Figure 2 Photo from Haley’s classroom demonstrating student progress



Petra insisted that her students wrote a reflective statement after nearly every PE lesson about what they had learnt and what they still need to learn. These reflections provided her with some evidence of student progress. In addition, teachers had continued to use checklists as a way to collect evidence of students’ movement skill progress.

As they became more familiar with eTAP, Haley was confident that teachers would be able to design assessments and record student results within the electronic system, which she felt would provided them with better records. Petra felt that the development of the school programme in 2007, with development progressions, would force teachers to maintain better evidence so that they could plan forward. Further research is needed to see how the new programme and eTAP affects student progress, teacher contribution to learning, and record keeping.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

Before the PD, teachers suggested that they had worked from the curriculum statement to identify the appropriate level their students should be working at. Given the nature of their school programme, the dominant focus on sport-specific movement

skills, and the descriptive, but not prescriptive nature of HPENZC, it would have been difficult for teachers to make links between student achievement and specific achievement objectives, possibly with the exception of within Strand B1. Petra noted that they had made efforts previously to make links to the curriculum and to address each strand at least once in a two-year cycle. Now, as a result of the PD, she felt that there was a need to ensure that:

... every classroom teacher has an understanding of the curriculum and the links between the curriculum, quality teaching and learning strategies and is delivering those. (Petra, interview two)

She felt that like her, other teachers had talked of understanding the curriculum, but this was not translated into school-wide or classroom programmes and practice. The PD had provided an explicit focus on the development of curriculum knowledge, but it would appear that this was within the theoretical parts of staff meetings that both Oprah and Haley said they did not enjoy.

Teachers' use of eTAP had provided them with a tool to make links between teaching, learning and HPENZC. Despite that, they had not yet explored how to use this as a tool to assist them to link student achievement to HPENZC. eTAP does not require teachers to have an extensive understanding of HPENZC in order to fill out unit plans, so therefore may not provide substantial support for teachers in developing links between student achievement and achievement objectives.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

The PD did not appear to have affected student participation, or attitude towards PA. Before the PAI, teachers at Waterfall School recognised that because their students were excellent participants, both during and outside of the school day, it was difficult to see a change in their behaviour, attitude or engagement. The only exception was the "intellectual" student in Petra's class who appeared to her to have become more engaged as the teaching approach had become more student-centred. The students in Petra's class indicated that they felt more engaged in lesson as they now got to have a say in the activities they did as opposed to just doing "running, running, running" (Student, Year 6-8 class). They also identified the difference between the sports that they did in the afternoons, the other PA they did with the teacher, and their forty-five minute PE sessions. For them sport involved more running around, having

fun and was focused on winning; while PE was focused on getting some physical skills, learning how to share and include other, and about having positive attitudes. Other PA for them was when they got to go out for “just a game” (River, Year 5) like dodgeball or bench ball.

Oprah suggested that the learning in class generated enthusiasm that was transferred to the playground.

I was teaching the children about throwing and catching, a lot of them were bringing balls from home, and I could see them in the playground ... they get so ... they enjoy it so much that they're bringing the ball from home, or racing for the gear here and they're doing it in the playground. They're carrying on doing it and with skipping I'm expecting the same thing. I bet they're going to start bringing their skipping ropes to school now and they're going to start skipping in the playground. (Oprah, interview two)

The students in Haley's and Oprah's classes indicated that they had predominantly “done sports” and learnt how to throw, shoot, skip, get goals and jump. Haley's students also talked about learning to play together: “don't fight on the courts”, “be nice to other”, “participate together” and “be a team together” (New Entrant, Year 1 students). However, they were adamant that they had not learnt this from their teachers, which leaves the question of where they were learning about social and interpersonal skills.

It would appear that student learning in PA, at Waterfall School, had remained focused on movement skills, however there is some evidence that indicates that students were developing knowledge and skills associated with being a positive, supportive participant in PA settings.

STUDENTS MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

Petra recognised that the work she had been doing in PE on manipulative skills had assisted students by providing with a wider range of movement skills, and that students were putting these to use in extra-curricular activities. Her students commented that the unit on manipulative skills had made them better at “controlling equipment” (Piki, Year 7) and “passing and catching” (Bernard, Year 8), which made them better in the sports they played. Parents (88%) at Waterfall School, also recognised that student movement skills had improved during 2006, putting this down to:

- Normal growth pattern, and coordination;

- Opportunities at school, including the amount of PE and fitness time;
- Encouragement from teachers at school to be active;
- Opportunities and encouragement from home;
- Being a senior in the school opened up more opportunities, i.e., triathlons, mountain biking, also the teacher is very sporty/active; and
- Having just started school and being exposed to a wider range of activities.

Professional development and facilitation

Having nearly completed the PD teachers and the Principal reflected on both positive experiences and frustrations from their involvement.

Frustrations

For Petra, as lead teacher, the process of the PD was particularly frustrating as she found it “hard to pick out exactly what they [SSS] wanted and I found it really foggy” (interview two). Petra suggested that teachers from other schools in the workshops had felt the same, and she was “not sure what track we are supposed to be following.” She came away from the workshops with lots of questions, and not a lot of answers. Petra had been told that SSS Advisers “can’t give us the answers - we have to work them out for ourselves” and was left wondering why the PE contract had been so “nebulous” (interview two). At the last cluster meeting Petra asked the advisers if it was possible to get an idea of what a school with a really good PA/PE culture would look like, and they said, “No we can’t, but if you talk to people, and by the end of the workshop you might have a better idea.” This had left Petra feeling disconcerted with the entire process, even though she felt that it had moved her own teaching on. The acting Principal indicated that she had been concerned about the level of frustration Petra had in relation to the contract, but also felt that the PD had shaken up Petra’s thinking and foundational knowledge about PE, which had added to the frustration but had also been a positive challenge.

Two teachers, not including Petra, commented that they had found the first session with the SSS Adviser uninformative, and that the adviser had been condescending, which had disengaged them from the PD almost immediately.

Petra expressed concerns that not all teachers had been involved in the PD and that this made it hard to expect everyone to be able to implement a new school-wide

programme with confidence. There was also the possibility of there being at least two changes in staff in 2007, and Petra felt that it would be important to make sure new staff were “on board” with PE in order to make more progress in 2007.

Positives

While the process had been frustrating at different levels for teachers, all had some positive experiences from the PD, including the discussions on learning intentions, and the pleasure they had from being involved in practical activities. Both Haley and Oprah highlighted in their second interviews that using learning intentions and questioning techniques with their classes for PE had been the most valuable aspects of the PD. Petra commented in her questionnaire that she had found the focus on games-centred programmes valuable.

Teachers had found the opportunity to be observed teaching and the adviser’s feedback to be positive and affirming. In the case of Oprah, the advice she remembered receiving from the adviser about using laminated sheets for her learning intentions had made it easier to change them. The adviser had helped Haley “identify that I [she] was on the right track with a lot of stuff... like having a movement segment, a skills segment and a games segment in a lesson” (interview two).

Physical activity culture

While it was evident that the staff at Waterfall focused on developing a positive and beneficial school wide physical activity culture, they did not appear understand the concept behind the term ‘physical activity culture’, as defined in *Physical Activity Culture in Schools* (Ministry of Education & SPARC, 2006, in draft). However, this did not prevent them seeing physical activity as a priority area for development in their school. Waterfall school had a strong commitment to PA before their involvement in the PAI. A particular strength of the school was its commitment to co-curricular PA, and ensuring that the school environment provided a range of opportunities for students to be physically active. It was evident in the research that at Waterfall School priority had been given to PA for the social benefit that it produced, as opposed to having a solely physical-health focus. Teachers and the acting Principal recognised that the more co-curricular activities that were available for students, such as inter-school and inter-house events, and the equipment box, the fewer behaviour management issues teachers needed to deal with. Teacher perceptions of the benefits

of providing physical activity opportunities were supported by parental responses to the questionnaire. The parents at Waterfall School recognised that the school provided a wide range of opportunities for students to be active, with 81% of parents indicating that their children had opportunities through PE classes and after-school sports, through school sport (91%) and through the provision of playground equipment (97%). Without RST involvement, the PD that Waterfall School experienced in 2006 contributed to the PA culture by supporting the development of the curricular programme within the school, and in some instances the organisation of classroom timetables (as is identified in the earlier sections of the case study). Further research in 2007, would provide an opportunity to see how the introduction of the new school plan is received and implemented, and the impact this has on the PA culture of the school.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

Have recognised the importance of PA within the school culture, teachers identified the following factors that contributed to making PA successful and positive at Waterfall School:

- Having high teacher input into co-curricular PA opportunities, with teachers encouraging students to be physically active. This was evidenced through their: involvement in developing and supporting fundraising for sports fees and transport for students; coaching and managing teams; running lunch time activities; informing students of upcoming local events; and helping students organize to participate in activities not run by the school.
- Providing a range of PA equipment for students to use at break times, such as balls, ropes, racquets, adventure playgrounds and fields and court spaces;
- Allowing students to use all the natural features at the school for PA purposes, including steep hills and trees;
- Ensuring that there were always sports teams available for students to participate in if they desired; and
- Using community support and facilities, such as the lake, when and where available.

Teachers recognised that there was not a large number of parents willing to be involved in PA opportunities for students, however they made use of those who were

willing, and acknowledged that they would consistently need to work to foster increased parent involvement.

CHANGE PROCESSES AND FUTURE STRATEGIES

The Acting Principal highlighted that the teachers had all started at diverse points and had unique needs; therefore, it did not surprise her that they had all taken something different from the PD. Petra suggested that it was difficult to change a teacher's approach to PE when they already "think they have it sussed" (interview two). Not having all teachers involved, and changes in staff appear to have made it difficult for all teachers to have gained similar benefits from the PD, however the effort Petra had made seems to have been the most important factor in the change process.

The on-going involvement of the adviser throughout 2006 had assisted Petra to grapple with ideas. Petra recognised that they had only started to address the PE programme and needed to consider a range of other factors if they hoped to develop PA further, including:

- Accessing on-going PD for PE that supports an continue process of transformation and refinement. Petra and the acting Principal outlined that this would need to include support for new teachers and those who did not access the PD in 2007, to ensure they were "on board" with PE. In particular, Oprah was seeking support to help her provide PE for the five special needs students in her class.
- Developing the school action plan and school-wide learning goals, and then ensuring that the PE is developed in line with this. Within the PE programme, Petra hoped to ensure that there were clear progressions that students would work through during their eight years at Waterfall School, as opposed to covering the same content every year. In line with this she recognised the need to involve the community in the decision-making process and possibly guidance for teachers to ensure that the PE programme was delivered;
- Enhancing resources for PA; and
- Exploring how they could increase parent and community involvement to support co-curricular activities.

WATERFALL SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Understanding the need to develop learning intentions did not ensure teachers had the knowledge to develop these in a manner that was appropriate to the level of the child, or to provide activities that allowed the students to work explicitly toward the learning intentions.
2. The facilitation and content of the PD needed to be pitched in a manner that made it accessible and relevant to the needs of the teachers as learners.
3. The focus of the PD on general pedagogical knowledge did not appear to assist teachers understanding the curriculum document or developing pedagogical or subject content knowledge to be able to deliver a HPENZC based programme.
4. The success of the Waterfall co-curricular PA programme required a significant commitment from the teaching staff within communities such as Waterfall.

CASE STUDY EIGHT: BUSH SCHOOL

Bush School 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, who were aged from twenty-six years to fifty-five years. Students, at the school, could choose to be taught in a mainstream, bi-lingual or full Māori immersion (Te Rūma Rūmaki) class. A beginning teacher replaced a teacher who had left during 2006, resulting in other teachers changing the class they taught.

Five teachers completed the initial questionnaire; however, only two teachers out of the five completed the second questionnaire. Both teachers, (referred to in this case study as Hillary and Maria), consented to be interviewed, and a focus group was used to interview their students. Maria was a beginning teacher who taught the New Entrant to Year 3 class. Hillary started the year teaching the Year 6-7 class, but then midway through the third term, shifted her teaching to the Year 5-8 bilingual class. She had been teaching for more than six years, however, this was her first year as a teacher at Bush School. The parents of the students Hillary and Maria taught in the fourth term, received questionnaires, and the response rate was 32%. It was possible to get a partial observation of Maria encouraging her students' participation and effort in the athletics sports, however, torrential rain later in the day, meant that it not possible to observe Hillary with her class.

Four out of the five teachers, who completed the initial questionnaire, had less than ten years teaching experience. All the teachers at Bush School had completed PD focused on PA. Only two teachers, since their initial teacher training, had participated in PD aimed at the planning and teaching of PE. Two other teachers had completed some personal skill development because they were involved in particular sports. One teacher, because of participation in RST opportunities, had learnt how to organise school-wide PA.

In 2005, the school had been involved in PD for the arts, and had recently completed their involvement in an ICT contract. In 2006, the major focus for PD was the PAI, however, some teachers were also involved in oracy PD. Bush School was expecting a visit from ERO during week nine of the fourth term and preparation for this visit was the dominant focus for Hillary and Maria during that term.

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

The school's physical environment included an adventure playground-jungle gym for juniors, court areas, a swimming pool, and a large grassed area for children to access for physical activities. There was also an indoor space the size of a double classroom which was used for wet weather curricular PA and teacher-supervised activities at break times.

Early in 2006, the school received a \$3000 trolley of equipment to support PA from an organisation associated with the RST. To ensure that the trolley and its contents was not damaged, the teachers decided that the equipment would only be used during class time, when there was a teacher present, and would not be available for a reliever to use with their class. They felt that there was "ample equipment" for students to use during co-curricular time without the equipment trolley, however, they realised how much the students appreciated having "new stuff" (Hillary, interview one). The school was intent on keeping equipment solely for curriculum time, and consequently was purchasing a bag of equipment for each classroom for use during break times.

Hillary was the sports coordinator and the lead PE teacher and part of her role was to ensure that all students took part in everyday PA for wellbeing. The school's DP had been involved in elite sport and consequently had an interest in supporting PA.

Curricular physical activity

Hillary and Maria both used the terms: sport; fitness; physical exercise; and PE, interchangeably to mean curricular PA. Before the initial interview, the SSS Adviser had run a staff meeting as part of the PAI, and this had broadened Maria's interpretation of PA. She recognised that she did a lot of movement-based activity with her class and this had enabled her students to be physically active. These activities included singing and moving, dancing and doing movements as she taught phonics. In her initial interview, Maria commented "when [we are] singing or doing phonics, or the number train game, during my mathematics lesson, because we are moving, it's actually PA."

PHYSICAL EDUCATION

In the initial questionnaire, the five teachers all indicated that their one year PE programme focused on developing sports skills and included the following: small and large ball skills; aquatics; athletics; cross-country; and gymnastics. One teacher also

identified kapa haka, mau rākau, haka, and waiata ä ringa as part of the PE programme for the Rümaki classes. Hillary, who had already been to the first workshop for the PAI, included invasion games in her planning. In her interview, she highlighted how this was a recent inclusion, because the SSS Adviser had supplied her with an exemplar unit plan. Maria did not always have unit plans or a clear picture of what she needed to do with her students. She would “observe students, and then decide what they needed to learn” (Maria, interview one). After this, she would come up with a lesson plan, or sometimes a unit plan.

The school PE programme followed different sports contexts based on a seasonal cycle; for example, swimming in summer and winter codes in terms three and four, and aimed to prepare students for zone sports. All classes were taught the same context at the same time during the year. Most teachers ran a twenty to forty minute PE lesson each week. All the lessons consisted of a warm-up, skill practice, a game, and a warm down. Both Maria and Hillary commented that often all the teachers held their PE lessons in the afternoon. Maria highlighted that this created a problem, because if all classes went out for PE together, there was not enough equipment for each student to use. In her initial interview, Maria mentioned that she had to be strategic about when she taught PE, because there were only two times in a week that she did not have to share the trolley. She had opted to change when she taught her class, and because she was not very confident teaching PE, she had scheduled one of her lessons at a time when her experienced release teacher taught the class. The release teacher would take the students for a game, focusing on the skills they had learnt in Maria’s PE lesson. “All I say to her is, I have done some skills for rugby, can you teach them a little bit of the game” (Maria, interview one).

The school assessed PE, using physical skills, twice a year. If the context were swimming, then Maria would take photos of how her students entered the pool, their pool strokes, and their exit from the pool. Student ability would then be assessed using the photos. Maria identified the need for teachers to develop a better understanding of assessment.

FITNESS

In addition to PE lessons, four out of five teachers had a daily fitness component to their programme. Hillary included athletics in the first term and then the intention was to shift to circuits and team activities (running, skipping) as the year progressed. For

Maria, and other members of the junior syndicate, fitness time involved students running around the field.

SYNDICATE SPORT

Thursday afternoon provided an opportunity for students to be involved in syndicate sport. As all teachers were covering the same topic in their PE lessons, syndicate sport incorporated games that reinforced what students were currently learning in PE, for example, soccer skills learnt in PE were used in games of soccer during syndicate sports. Although Hillary had been using the invasion games unit, supplied by the adviser, in her PE lesson, her class still engaged in syndicate sport.

Co-curricular physical activity

BREAK-TIMES

Maria commented in her initial interview that students “get into trouble at lunchtime [and] so we keep them occupied ... We are starting to do a really good job with it.” The students had something happening each day and the duty teacher as well as a sports teacher supported this. The teachers communicated with each other so that if something extraordinary came up on their sports duty day, then, to allow them to deal with the situation, they would swap their duty with someone else, thus ensuring the students were engaging in an activity. The activities included scatter ball, soccer, touch, swimming and dance. The students, predominantly middle and senior students, were involved in sports practices three days per week.

Teachers reported that most students, except when held back in class and this was frequent, participated in some activity at break times. Teachers endeavoured to include children of all ages in the activities they ran, but often the junior students chose to play their own games, and used the jungle gym area. Students brought their own equipment to play with, but also asked teachers for the equipment that was available in their classrooms.

REGIONAL/ZONE SPORTS

Year 5-8 students had the opportunity to participate in regional sports competitions. Hillary felt that this provided students with the opportunity to become familiar with a wide range of sporting activities not offered locally. Bush School had teams competing in competitions such as gymnastics, swimming, soccer and hockey, and teachers felt

that it was particularly important to expose their students to these opportunities. Hillary and Maria felt that this was because the parent community did not have the time, or were unwilling to give up time, to provide their children with such a wide range of opportunities.

THE PHYSICAL ACTIVITY INITIATIVE

Bush School signed up for the PAI as the Principal felt that it would support a more physically active culture in the school. Hillary argued that an improved participation in PA would act as a deterrent for poor behaviour. School leaders also hoped to encourage the teachers to up skill and develop a better understanding of the PE curriculum, so that they did not have to rely on teaching traditional sports.

During the latter part of 2005, Hillary had attended an introductory workshop offered by SSS and the RST. During 2006, she has attended a series of cluster workshops offered by SSS. These, according to Hillary, had focused on the delivery of curriculum PE, using games (TGfU), and inclusive teaching methods. Hillary had also attended an Active Schools Toolkit training day provided by the RST during term one. The adviser from SSS had also spent seven days at Bush School working with staff. During these seven days, teachers had been involved in staff meetings run jointly by advisers from SSS and the local RST. Teachers had model lessons demonstrated to them, were observed teaching their own classes and received feedback. Hillary indicated that the RST personnel had taken “the physical component of the staff meetings” while the SSS Adviser had focused more on “bringing in the curriculum stuff.” The focus on the physical component included opportunities for the teachers to participate in physical activities that they could use with their class. Hillary had enjoyed the invasion games unit plan supplied by the SSS Adviser, and had given each staff member a copy with the expectation that they adapt and deliver it to their class.

The SSS Adviser also taught a demonstration lesson with Hillary’s class, which because of disruptive students the adviser had struggled to manage. This helped Hillary understand that the students could also be difficult for other teachers. The adviser later taught another lesson that met her needs. She then taught a lesson observed by the adviser, and received feedback about her teaching.

Personnel from the RST had been involved in running lunchtime activities for the students, which the teachers observed and then taught during class time; this did not

involve direct PD for staff. The RST had also run a staff meeting early in term four to work through the Active Schools Toolkit with all the staff which reinforced the learning that Hillary had got from the session in term one. At this staff meeting, the RST Adviser had brought in “the curriculum [view], and how these games work with the curriculum. [They also discussed] how we [teachers] can make up our own games and [access] sites [online]” (Maria, interview two). Maria commented that the SSS Adviser had given them a card sheet outlining, “a whole lot of different games that we can incorporate into our own [teaching of] classes, which has been really great” (interview two). Maria and Hillary both appreciated the continued involvement of the RST personnel.

The adviser had one day still to work with Bush School and Hillary planned to work one-on-one with the adviser to develop a new long-term plan for PE. She also hoped to set up a review of what stage the teachers had achieved, and then offer support and PD for these teachers in 2007 to ensure the implementation of the long-term plan.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

It is difficult to gauge the impact of the PAI on the entire school as only Maria, Hillary and the Principal were involved in the second round of data collection. No other teachers completed the second questionnaire; therefore, the impacts on these teachers are only reported from the perspective of Hillary, Maria and the Principal. The restricted data available to inform the second part of this case study, means that the proforma used in all the other case studies will not be fully adhered to for Bush School.

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

Before experiencing the PD, Hillary had not made a distinction between PA and PE. She saw them as the same. In questionnaire one, all five teachers reported that the development of physical skills was a component of their PE lessons, although their curricular and co-curricular PA programme had centred on involving students in sport such as games of tee-ball, rugby, soccer and netball.

Hillary had attended the externally run PA cluster meetings, and emphasised to the other staff that “PE should be skill driven ... [as] opposed to just going out and a

having a game of sport” (interview one). She had come to understand PA as the active application of learning, and PE as theory, instruction, and skills. Hillary had not changed the different contexts she used to teach, however, she now thought there were different ways she could teach the content and different ways the students could learn. As an example of her new thinking, she planned to incorporate a focus on safety in aquatic environments, within the swimming programme, rather than just looking at stroke technique. Hillary reflected that there had been a mind shift for the other teachers, who she felt now, understood that PE had to address the development of physical skills. For Maria there was still some confusion about what constituted PA and PE, as this comment shows:

For me PE and PA, I just really want to make sure that it is incorporated in all my curriculum [material] stuff. If it does not happen in maths, it is going to happen in the next section. I try and give the kids a range of physical activity as well as [them] just sitting there writing in their books. It is really identifying, what is physical activity? [Therefore] we do the Incy Wincy spider, or just movement, and that kind of [activity]. Like I said before, I would not have classified that as physical activity. (Maria, interview two)

In Maria’s class, PA took place in a range of contexts, including math, and reading, and her PE lessons, despite the PAI, professional development opportunity, continued to involve the students playing games, being involved in sports and developing sport-specific skills.

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

Impacts on lead teacher

Hillary reported changing the structure of her PE lessons, because of her involvement as lead teacher on the PAI. It was not possible to observe Hillary teaching a PE lesson, due to inclement weather conditions; however, she reported that her teaching of PE had changed through the inclusion of ability grouping, units such as invasion games and learning intentions.

I used to teach class wide. I used to say, for example, if we were doing soccer skills, we will have a soccer ball in pairs and we will just kick it to each other. I would not play an activity until later on, until they had learnt the skill of kicking back and forth or directional kicking. Now I set up three groups. The higher group, the children confident with kicking the ball and trapping the ball, an average group, and [lower] group ... the group that does not feel confident. If they were with the confident group, then they would be like fish in a shark’s pond. I did not realise

that until [the adviser] came and I thought ... "Oh,"... Then I said this to Nadia and Sue ... "I do it in reading and I do it maths, but never in my mind did I think to do it in PE!" You know. [Therefore], my mind's changed from whole-class [thinking], to ability group [thinking], to small groups of children [with the] same competency. (Hillary, interview two)

Hillary had trialled the invasion game unit plan with the class she taught for the first part of the year, and then used it again when she changed class. She explained that the unit incorporated all winter sports:

... all those big ball sports, but it is not called soccer. The unit isn't called soccer skills, rugby skills, or netball skills; it's incorporating all those aspects of motor skills, as well as ... how to work ... co-operate as a team. (Hillary, interview two)

Hillary had used the invasion games unit to explore big ball sports like, rugby, netball, basketball and soccer, but felt that, since hockey used a small ball, the game could not be used. This may indicate that she had not fully understood the TGfU concept of invasion games, since hockey, (along with soft lacrosse and water polo), is an invasion game, and therefore, the principles used in the invasion game unit are still applicable.

Hillary's planning showed that she was recording learning intentions related to her lesson, however, they were from the unit plan provided by the adviser. As no observation took place of her teaching, it was not possible to explore how she shared her intentions with her students. Hillary was yet to develop her own unit plan, but intended to work with the SSS Adviser to develop a 'run, jump, throw' plan. She also hoped to use another unit that the adviser had given her, with the students.

In the last meeting Hillary was to have with the SSS Adviser, she hoped to develop a school-wide overview for PE. As part of this overview, she anticipated changing the structure of PE across the school, so that the programme became wider than simply focusing on zone sports. Hillary was also determined to make better use of community expertise and facilities to support the programme.

Hillary felt more confident and competent delivering PE, although in interview two, she reported feeling that 2006 was the year where she had "soaked up the knowledge," and that 2007 would be the year she applied it. The new ideas that she had gained from her "intensive PE development" in 2006 had made her recognise how important PE was, and how much more she needed to learn. She suggested, in interview two, that it would be unethical for PD to be withdrawn from the school in 2007, as she felt the need to have ongoing contact with an SSS Adviser, to support her, and the other teachers PE practice.

Impact on other teachers

In contrast to the development that Hillary experienced, the evidence suggested that Maria, and other teachers in the school took from the PD a range of games and activities to add to their own activities for delivering PA opportunities. The Principal commented:

The best thing is a whole lot of new kinds of activities for doing the same things different ... You can get stale, teachers can get stale, and they go out and do the same old, same old [activity]. [However], I think with the PD we had ... we have had a huge variety of different activities and staff have been motivated to try new games, and fitness regimes. (Principal interview)

As a beginning teacher, Maria found that having a whole lot of different games that she could include in her own lessons had been the best thing about the PD. She recalled feeling stimulated by the new ideas for physical exercises that she had received during the year. Maria reported having used two of the games they had learnt from the PD with her class. She had used the games she had felt comfortable with, commenting:

I thought, "Yes, I have seen that game before ... I know how that game is [played]. So, yes, we will play that." ... without me having to refer to the card sheet all the time ... and [so] I have actually ad-libbed [about] the games and made our own sort of games from some of the games. So we have recreated some of the games to suit us, and our limitations, and their [the students] age. (Maria, interview two)

It would appear that Maria had developed more confidence in her own decision-making, in all curriculum areas as 2006 had progressed. At the beginning of the year Maria felt that other teachers were telling her what to do, commenting, "I think it was because I was just finding my ground, and maybe they were just giving me ideas, because that soon all went away. I just had to do it the way that I knew how, anyway" (interview two).

For Maria, her focus for 2006 had been on getting used to full-time teaching, and in term four, in particular, she had focused on getting everything ready for the ERO visit, which had put extra demands on her. It would appear that the PD had had little impact on Maria, as she focused her planning and teaching on other curriculum areas, rather than PE. She indicated that with the exception of the staff meetings, she had not really been involved in the PD.

Hillary suggested that although other teachers were making use of the Invasion unit, and trying a wider range of games and activities in their practice, there was no other evidence to confirm that teachers had developed new skills, understandings or knowledge about PE.

I see a difference in terms of [the teachers] moving from playing sport, to actually their use of equipment, their use of the skill. 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, then, this game and we did this here, and they learnt this skill." Because the learning intentions are outlined ... you know ... "We talked about this first, and then we got out there and we did that activity there."... this was good to see ... I gave them that resource and they were actually using it. (Hillary, interview two)

ABILITY TO DETERMINE STUDENTS' PROGRESS IN MOVEMENT SKILL DEVELOPMENT AND THE CONTRIBUTION PHYSICAL EDUCATION MAKES

Hillary reported that there had not been a significant emphasis on assessment within the PD programme, and therefore, it was not clear whether or not, the teachers' ability to assess student progress in motor skill development had changed. Teachers continued to assess movement skills within their PE programme, generally using summative assessments, which do not provide evidence of how PE is contributing to movement skill development.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

The teachers at Bush School used an administrative tool called Classroom Manager to maintain student records of achievement. Hillary commented that she linked assessment with achievement objectives and learning outcomes, however, these related predominantly to Strand B, Achievement Objective 1. Teachers could use Classroom Manager to explore student progress, however, both Hillary and the Principal recognised that this area still needed development.

MOTIVATION AND CONFIDENCE TO OFFER CO-CURRICULAR PHYSICAL ACTIVITY

The teachers at Bush School had encouraged and supported students to be involved in PA before the school's involvement in the PAI. They took responsibility for engaging the students in PA during lunch times at least once a week, and this sometimes took the form of games, dance, kapa haka, swimming, or sport. The Principal, Maria and

Hillary all commented that the PD had given them a much wider range of games to enhance the students' lunchtime activities, which also had the support once a week, of a member of the RST. When Hillary took lunchtime activities, she had motivated the students with one of the successful games from the Invasion unit.

An interesting outcome of the PAI had been the teachers' own motivation to be involved in PA. Maria commented that in a similar way to the other teachers, she had realised that there was a need to be a role model for her students and her own tamariki, by increasing her own involvement.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

There was little evidence to suggest any change in student knowledge, attitudes, or participation in PA because of the teachers' involvement in the PAI. Hillary had observed some changes; but no other interview or questionnaire data, showed any change in student achievement.

Hillary felt that her strategy of using ability groupings in her PE lessons had made them more enjoyable, commenting:

I thought there would be resistance because their friends were not in their group ... They did not like it at first, because it was [like], "Oh, I want to go with so-and-so." I said, "Oh no, let us try it this way and see how it goes." To show them that there was a big change, I put them back in their groups, you know, back with their friends. They noticed that ... with the advanced group, the average group and the below group, they had... noticed that with this group they were more ... they could get the ball, they could throw the ball, and they could catch. With their friends they [said], "Oh they made a mistake, or fumbled." I actually found ... them more disruptive when they were with their friends ... and they were [now] more confident ... realising that in this mixed ability group, they were working at their own levels. (Hillary, interview two)

Hillary taught the Year 5-6 class for the second half of the year, and had trialled the invasion games unit with them, before resorting back to the traditional athletics programme. Her students reported having many opportunities to be active during the school day, including whole-school sport on Thursdays, fitness nearly every day, and after school practices for interschool teams. However, while the learning intentions for Hillary's lessons did not have a sole focus on movement skill development, her students, after the PAI, reported, that they had learnt to run better, and one student

reported that he had improved in rugby league. Her students did not appear to be aware of the change in the way Hillary had teacher taught them, including the use of ability groups, and on the broader focus on the content.

Maria's New Entrant, Year 1 students were excited about the fun PA activities they are involved in during class time including athletics, tug-of-war, soccer, fitness, unders and overs, stretching, running, rugby and dodge ball. PA was seen by some as a reward, where "if you don't do your work, you [will] have to do it at lunchtime or morning tea, and if we do our work, we get to go out to lunch early, and play" (Cynthia, Year 1).

The younger students were very positive about participation in PA at break times, including playing on the adventure playground, monkey bars, and playing line tigg (tag), however, the senior students generally felt that break times were boring. They talked about playing marbles, sometimes playing touch or rugby, or just walking around the school talking to their friends. They had only played marbles for the second half of the year, as marbles were "[now] cool and it was boring to play nothing" (Year 5 student). This comment from a Year 5-8 student explains why break time could be boring:

... because we do not have equipment ... all the basketballs and [other equipment] are put away ... We used to have [a] rugby ball, tennis balls, racquets, cricket bats, and tee-ball ..., [but] some of them go missing. Now we just play out on the field ... It is boring; we just sit in the classroom talking, or just play in the park ... We have a sports trolley, but we aren't allowed to touch it, it is only for sports teams. (Year 5-8 student)

These students appreciated having someone from the RST come and take activities during break times, but they were frustrated because of the lack of equipment available to support their play.

The PD appears to have little impact on student attitudes, knowledge or participation in PA, either, inside or out of the classroom. The fact that Maria was a beginning teacher, and that Hillary had to change classes, may have influenced what appears to be a lack of impact on student achievement.

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

Teachers, prior to the PD initiative, had been confident that the majority of students at Bush School demonstrated a high level of competence in movement skills. Students

had successfully competed in many interschool events, and had been able to participate in a wide range of physical activities. However, Hillary did comment that there was room to refine student movement skills, and provide them with opportunities to transfer skill learning to different activities.

Hillary alluded to a change in teachers' thinking when she explained that participating in the PD opportunity had meant that physical education lessons had become more skills-focused than just game play. However, there was no evidence to suggest that there had been much progress made in the development of student movement skills in extra-curricular activities. During the PD, there was not a focus on monitoring student progress on movement skill development, and therefore records of progress and the impact of the PD on progress were unavailable.

Nevertheless, the majority of parents (78%) indicated that they had seen an improvement in their children's movement skills during 2006. However, no parents identified changes in the school programme as contributing to this development.

Professional development and facilitation

The three teachers interviewed during the second research visit were positive about their PD experience. Maria had enjoyed the opportunity to participate with other teachers in activities that they would all find useful in the classroom.

They have [SSS and the RST Advisers] been out here teaching us a few things, [and showing us] some fun games and activities. As staff just learning it, ... but we do not even realise we could do that kind of activity but when we are doing it we are having so much fun and straight away it is like, "I am taking that one back into the classroom!"(Maria, interview two)

It would appear that the learning of the games the most valued and enjoyable aspect of the PD. These games provided teachers with 'take-away' activities that they could use immediately with tier classes, however comments by both the Principal and Maria would suggest that this was all that they took away from the PD.

Hillary described her experience of the professional development as "in-depth" because she had attended the external cluster workshops and had worked with the SSS Adviser independently of other teachers. The cluster meetings had provided Hillary with ideas that she then shared with the other teachers. She particularly valued the lesson plans, resources and opportunities to look at planning an overview. Hillary

felt supported by both the Principal and the deputy Principal, but recognised that there was a need to continue the PD, preferably with external support, during 2007.

Although the Principal agreed that the teachers would need another year to think through what they had learnt and embed it into their practice, she did think that the games and activities they had learnt had already assisted the teachers in their delivery of PA.

The Principal and Hillary were interested in exploring ways that they could sustain the outcomes of the PD in 2007, including the probability of reviewing PE within their cyclic plan. Hillary commented that other teachers had not had the opportunities for PD that she had, so recognised the need for her to take the lead role in delivering the school's PD in 2007. Hillary had already thought about how she might do this, including:

- Have each teacher observe at least two of her PE lessons to see how she used ability groups;
- Assume responsibility for PE planning, to give the other teachers time to develop resources, such as unit plans and activities; and
- Appraise other teachers and provide feedback to them, (during term two), to give them time to put their new knowledge into practice with their own students.

Physical activity culture

Before the PD, teachers were positive about PA at Bush School. The Principal had signed the school up to Model 2, as she was concerned that PE lessons were very games focused. The Principal felt that the school was doing a very good job of sport, encouraging students to be active and providing them with activities at break times. It was not apparent from the data what Bush School understood by PA culture, however, they were interested in developing opportunities for students to be active.

The PD had provided the teachers with a wider range of games and activities that they had been using in both curricular and co-curricular settings. However, there was little evidence, with the exception of Hillary's comments, that there had been change to the curriculum programme, or teachers understanding of HPENZC. The lead teacher for PE had the intention of planning a new overview for 2007, and providing teachers with unit plans and resources, which may mean, further change to curricular PA in 2007.

Bush School had fostered stronger school community partnerships through their involvement with the RST personnel running lunchtime activities, and providing the \$3000 trolley. The equipment trolley and access to the Active Schools Toolkit gear had provided more resources for teachers to use in their classroom, which they felt had allowed them to deliver a wider range of activities. Hillary was also exploring the possibility of using community facilities and sporting organisations to complement the learning.

In contrast to the teachers' and the Principal's views of PA at the school, results from the parent questionnaire, suggest that the school's PA culture is in need of improvement. Fifty per cent of the parents responding felt that the school was only 'fair' at encouraging students to be physically active, and less than 25% ranked the school as excellent. However, only 57% of parents identified the school as providing adequate playground equipment for students to use at break times. This finding supports the Year 5-8 bilingual students' views that they did not have access to equipment at break times. The students, in the past, did have equipment to use, but due to loss, thief, and damage this was no longer the case.

The Principal indicated that she was interested in seeking financial support, extra to the school's budget, to purchase new playground equipment for PA. This could possibly finance a walking-running track around the school boundary, and additional resources for teacher to use in PE lessons, as there was not always enough money in the budget to accommodate such purchases. Some of the parent and teacher concerns may be alleviated if these purchases are made.

Further research is needed to determine the impact of the PAI at Bush School, once the new PE overview is in place, and all teachers have experienced further PD, delivered by Hillary.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

Bush School identified the following factors that assisted the school to create opportunities for students to be physical active:

- Teacher willingness to be involved in running PA at break times, and supporting each other in doing this;
- Access to new equipment, in the form of the gear trolley;

- A range of spaces teachers can use for classes, and students can use during break times;
- The flexibility of the timetable that allows teachers to work individually, or as part of a rotation with other staff when delivering PA;
- Support from the RST to run PA at breaks;
- Opportunities for students, particularly seniors, to participate in interschool competitions, enabling them to broaden their range of experiences; and
- Recognition of student success, through certificate presentations at assemblies.

While 50% of parents indicated that the school was not good at encouraging students to be physically active, over 85% of parents recognised that the school provided opportunities for children to participate in PE, and over 75% thought the school provided good sporting opportunities for students.

At Bush School there were developing opportunities for students to engage in PA. A successful introduction of the school's 2007 PE overview may see this PA culture developed further. Parents were not aware of any changes, or PD that the school had undertaken in 2006 to enhance PA opportunities. Further research is required to see how teachers receive and deliver the new overview, and what affect this has on the school PA culture.

CHANGE PROCESSES AND FUTURE STRATEGIES

Hillary's willingness to learn and try new things made the PD process successful for her. Her enthusiasm and desire to support other staff in their professional learning may prove crucial to the development of PE at Bush School. The Principal was committed to the development of PA, both curricular and co-curricular in the school, as she felt PA was essential to help decrease tension and conflict between students in the playground, by providing them with opportunities to develop new skills. An open, sharing culture within the staff was evident. Staff reported feeling comfortable learning from one another, sharing ideas and observing each other teach. This openness has the potential to enhance the change process.

In contrast to the processes that supported change, there were some factors that appear to have lessened the impact of the PD. These included, changes to staffing, having three beginning teachers, and the impending ERO visit. The loss of an

experienced teacher during the year meant that Hillary had to teach another class. While she felt she had been able to trial a range of new ideas with her former class, the Year 5–8 bilingual class caused her to experience additional management issues, which Hillary felt had inhibited her progress. According to Maria and the Principal, the beginning teachers' learning in their first year had been on areas such as planning and time management, developing reading and writing programmes, and establishing themselves as teachers. It would appear that for a beginning teacher, such as Maria, the external PD was not a significant focus for her. Term 4 presented the additional distraction of having ERO come to visit in week nine. For Maria, in particular, this had added additional anxiety, as she felt the pressure to have everything right and available for the ERO visit.

Hillary acknowledged that, in order to keep enhancing the teaching and learning of PE, she would need to run additional PD for teachers, and monitor their progress.

The teachers and the Principal identified a range of factors they would need to consider in 2007 to continue to develop their PA culture, including:

- Seeking further funding for PA equipment;
- Accessing community facilities, such as the local pool, if funding was available; and
- Sourcing external PD expertise, to run activities, and to enhance the delivery of the PE programme.

BUSH SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. A more explicit focus on the learning intention of staff meetings and workshops needed to be emphasised, so that teachers understood the importance of using games, as opposed to just valuing the games as activities they could replicate in their class;
2. Providing model units plans was useful, but ongoing support with managed withdrawal is needed to move teachers from dependence to independence;
3. Staffing changes appeared to impact on the success of the PD, both for individual teachers and the school community; and
4. Beginning teachers understanding of HPENZC needs further exploration.

CASE STUDY NINE: AIRPORT SCHOOL

Airport School 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.

Of the twenty-three teachers, sixteen responded to the first questionnaire, made up of fourteen female and two males. Of these teachers 75% were classroom teachers with the other four teachers identifying as syndicate leaders or senior teachers. While the teachers at Airport School represented a spread across the age groups (26–56+ years), over half were in their first five years of teaching. Fourteen teachers responded to the second questionnaire.

From the teaching staff of twenty-three, four teachers were selected, and consented, to be interviewed and observed. Three of these teachers (referred to as Claire, Heather and Octavia) had been perceived by the Principal to be representative of an expert, intermediate or a beginner at delivering PA. In addition, the lead teacher on the PAI, referred to as Corrine, was also interviewed and observed. Octavia was also the lead teacher for her syndicate. Focus group interviews with students from each of these four classes were conducted after the classroom observations. Parents of the children from these four classes were sent a questionnaire to explore their perspectives of PA at their school. The response rate to the parent questionnaire was 69%.

With the exception of one teacher, all at Airport School had had some previous PD focused on PA. The focus of their previous PD had been on planning for and teaching PE as classroom teachers. However, seven teachers had also done some PD for personal skill development, and four had learnt about how to organise school-wide PA opportunities. Claire commented that she had very little PD relating to HPENZC and found it vague, while Corrine, did not feel at all confident delivering any PA opportunities and had had limited exposure to teaching and learning in this area. Alternatively, Octavia and Heather had years of experience in coaching sport and had “focused on the sport papers at college” (Octavia, interview one).

In addition to involvement in Model 2 of the PAI, the Principal reported that most of the staff were involved in a range of other PD, with “small pockets” of the schools working on different contracts, such as literacy and numeracy.

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

Airport School had a range of adventure playground areas, along with court spaces and expansive fields that students had access to for PA. While there has no dedicated area for particular groups, and students were encouraged to play wherever they liked, there were playground areas more specifically designed for different age groups.

Airport School also had a large hall space that they used for PA during class time, and which students were allowed supervised access to during breaks. For the teaching of aquatics the school used a local swimming and recreation centre that was within a short walk of the school. While half of the staff felt that the school was successful at promoting health-enhancing PA, others felt that there was only an attempt to promote PA. Teachers who did not view the school as successful in promoting PA commented that while the school offered opportunities for students to be active both in class and at break times, only a small number of staff actually contributed to coaching/managing school sports, and this reduced the numbers of teams that were available. This is reflected in the questionnaire results that indicated, of the teachers surveyed, all (16) were involved in co-curricular PA as classroom teachers. Only six teachers were also sports coaches, with one of these teachers assuming the roles of coach, manager, event organiser and team coordinator.

All the PA equipment was stored in a cupboard in the school hall. According to Corrine, this meant that most teachers delivered their entire PA in the hall space, purely for convenience. Heather commented that there were “rugby resources, cricket appropriate gear, and soccer resources, but we just use what we have, it’s not a lot” (interview one). She also felt that the concreting on the netball courts was an OSH issue. In addition to equipment in the hall, each classroom had a limited supply of equipment that students can use at break times. All four teachers interviewed commented that this gear was most often lost/left out, and therefore became even more limited. Early in 2006, the school received a \$3000 trolley of equipment to support PA, through an organisation associated with the RST. It was decided that the senior syndicate would be the only group to have access to this equipment, and only during class time.

Curricular physical activity

In the twelve months leading up to their involvement in the PAI, teachers at Airport School had not been delivering any curriculum PE. A teacher from an intermediate school had been employed as a specialist to teach all PE lessons during teacher release time. This meant each class got one hour a week PE. Octavia suggested that this had resulted in the most PE ever being delivered in the school. During 2006, someone to deliver the arts curriculum had replaced the specialist PE teacher, and classroom teachers were again responsible for the delivery of PA.

In 2006, 56% of the teachers surveys indicated they taught PE once or twice a week, while the remaining teachers either taught 3-4 times a week or daily. However, the interview data suggests that within this time a range of PA opportunities were included, for example fitness, PE and syndicate activity. At Airport School, different syndicates operated differently in relation to what was delivered for PA. Teachers fitted their planning around syndicate decisions, and worked in with timetabled PA, and some opted to deliver additional PA on their own.

SENIOR SCHOOL

In the senior school, curricular PA amounted to a fitness circuit two days a week in the hall, where students were encourage to be active for between 15 and 30 minutes. This was set out at the beginning of the day and then each class was timetabled in for a slot. Teachers took their own classes for this. This sometimes included ball skills, JRFH or Jump Jam.

In the summer term teachers took their own senior classes for aquatics, but for the rest of the year the senior syndicate ran sports rotation once a week for one hour. Claire indicated that her syndicate leader (for seniors) decided what the classes did. She commented:

It is a bit of an institution, we do this at that time of the year ... and it just carries on like routine. We could change that, but it makes sense to do winter games in winter and summer game in summer, what determines it more than anything is the interschool competitions so you prepare for those. (Claire, interview one)

Syndicate time was sports-based, focused on games and skipping routines, large ball games, athletics, and cross-country. Each teacher was expected to take one game and the students rotated around the activities. For Claire this meant finding something she knew quite well and she felt lucky that the other teachers took sports like rugby, as

they over came her shortfall. In addition to these opportunities, Heather included kapa haka in her PE, and was able to do this as she taught the bilingual class. This gave her class an additional opportunity to participate in PA in class time. Heather preference was not to do syndicate sports, as they were “a waste of time ... no development ... and a lazy way of doing sports – easy day off” (interview one). Octavia, who was new to the senior school, saw circuits as fitness time, not PE, and identified the syndicate sports rotation as the only timetabled PE time for the senior school. Claire, also from the senior school saw the circuits as PE, and syndicate sports as just sport time. These descriptions demonstrate the lack of clarity between teachers about what constituted PE.

JUNIOR SCHOOL

In contrast, the junior school, including five Year 1 classes (seven by the end of the year), had PE led by a senior teacher. This was timetabled for forty-five minutes, twice a week, and teachers were told that if “you did not go in with the syndicate, you miss out” (Corrine, interview one). For the majority of classes the PE programme consisted of relays, as there were so many classes in the hall that this was the best way to manage the students. The contexts of the relays changed and depended on the topic that was being covered. In the winter term the juniors also did dancing, gymnastics and game play. This proved difficult to manage, however, Corrine commented that it would be difficult to change the junior programme as you would need to accommodate too many classes in the hall, and the field did not seem like an option, as if it was wet then PE would have to be cancelled. Some junior teachers (less than 10%) also opted to run an extra PE lesson that focused on skill development. During this, for example, Corrine used little games out of the *KiwiDex* manual to build up students’ skills, and then moved on to a game.

Interestingly, Octavia, who had moved from the junior to the senior school at the start of 2006, commented that she liked the junior programme because it was all hall-based and this meant that PE could go ahead even if it was raining. With her senior class, she had not had PE for 2 weeks due to poor weather, when she had been unable to get a slot in the hall.

Co-curricular physical activity

SCHOOL SPORT

Year 4+ students at Airport School had the opportunity to be involved in a range of sports teams, including netball, rugby, soccer, hockey and cross-country. The teams competed in local cluster competitions. Practices for sports teams were run five days a week. Heather and Octavia commented that only five out of the twenty-three teaching staff took any responsibility for coaching teams, with two teacher aides assisting. At times coaching also meant transporting children to games, as parents were unavailable, and there was an assumption that “if you pick my kid to play, you will pick them up” (Octavia, interview one). Heather commented that it was “mainly Māori and Pasifika teachers who took teams” (interview one) and that other teachers were not very forthcoming. There was very little parent involvement or financial support for sports teams. However, community groups such as church groups in the area, supported students in their participation, and also ran teams students could play in.

BREAK TIMES

At break times, if students were not involved in sports practices, they were able to access balls, skipping ropes, elastics, gutter-boards and the adventure playground areas to support them in being physically active. Claire commented that her boys were very active at break times, but that girls were less active and spent most of their time on the monkey bars, which according to Claire was not very active. Most other teachers interviewed thought the majority of students were very active at break times.

At the end of 2005, the school had trained sports monitors, who took responsibility for running games for the junior students at lunchtimes. Heather (interview one) commented that she rarely saw management out on the fields at break times or “other teachers interacting with students in a movement sense.” Occasionally a teacher versus student game ran, as a way to get teachers out there being active with the students, but the teachers who coached usually supported this. Claire suggested that she did not come out to the student teacher game because she was not confident.

ADDITIONAL

Early in 2006, the local RST had come to Airport School and run a parent event in the evening. The purpose was to promote PA, and involved both parents and students in a

range of sports and games. This was a one-off session that was well attended. The school also has an Out of School Care and Recreation programme that provides opportunities for students to be physically active.

THE PHYSICAL ACTIVITY INITIATIVE

In 2005, Octavia attended the PAI introductory workshop with the Principal. From this a decision was made that Airport School would be a Model 2 school. Two teachers, one from junior syndicate (Corrine), and one from senior school (Octavia) acted as lead teachers for the initiative. Octavia felt that she had not been asked to take this role on, but told to do it. She did not see it as her priority, considering the fact that she had a new baby at home, and had changed from the junior syndicate to the senior school. Corrine had been given her lead teacher role, when the teacher who had the role left on maternity leave at the end of term one.

The lead teachers attended cluster workshops run by SSS. Corrine attended all four workshops, while Octavia only made it to two. The focus of these workshops had been on the theory and practice of what you could do inside the classroom. There were links to the draft curriculum. Both Corrine and Octavia commented on how the cluster workshops had included learning about questioning, sharing learning intentions, ability grouping and using games for learning. One workshop, that had included a presenter from WaterSafety New Zealand, had Corrine thinking about what they could do for aquatics both in the classroom and in the pool that would be relevant for their students.

In addition to the lead teachers attending workshops, the SSS Adviser ran staff meetings for the entire teaching staff. Each time Corrine ran these in conjunction with the SSS Adviser, which she had felt anxious about, but commented that this role had helped her develop confidence to talk in front of large groups of people. A RST Adviser had also been to all the staff meetings, where she ran the practical activities. Two staff commented in their questionnaire responses that they had learnt about sharing learning intentions, ability grouping, increasing participation, and using positive reinforcement. All fourteen who responded, indicated that they had received most of their PD in relation to planning and teaching of PE. The SSS Adviser had been to Airport School on five or six occasions (Corrine, interview two) and worked with almost all the classroom teachers. With each teacher, she has modelled a lesson, then observed a lesson and provided feedback, written and oral, and feed-forward as to

what teachers might do next. For Heather the observation had been for only 10 to 15 minutes, but she felt this had been enough, and she had received some positive feedback.

At the end of term two, Active Schools Toolkit training had occurred. While Octavia and Corrine had attended a workshop on this, they had then shared this with the whole staff in a staff meeting. Airport School has also worked closely with the RST in 2006 to access a wider range of equipment to support PA, however, no other PD opportunities had been provided.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

There was no evident shift in teachers' concepts of physical activity or PE. Teachers at Airport School continued to view PA in the school setting as:

- Using skills you have learnt in a fun way like games, activities - relays, tabloids (Teacher 28);
- Not delivered by the teacher, so for fun, own choice, playing etc (Teacher 30);
- Done during students own time, e.g., playtime, after school, etc; and
- Fun and participation for all, irrelevant [sic] of skill level (Claire).

While PE was still most commonly viewed as relating to the teaching of specific skills, which are then used to play a game, only two of the sixteen teachers who responded to the second questionnaire suggested that PE was linked to HPENZC, with only Corrine mentioning that PE might develop teamwork and cooperation in addition to physical skills. However, it was apparent that the PD had challenged some teachers to think about the terms PA/PE, with teachers commenting:

- They go together and enhance one another. (Teacher 29);
- Physical education is broader than physical activity. PA is part of PE, (Teacher 31);
- One enhances the other (Teacher 32);
- PE is needed so that the children understand why they do PA (Teacher 33);

- They are connected in that the more physically active we are, the more likely we are to get involved in sports or other PE activities and also lead fitter healthier lifestyles through our lives (Teacher 36).

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

The PD had different impacts on the physical education knowledge, understanding and skills of individual teachers. As the Principal indicated in her interview, “For some teachers any extra is too much, this PD included.” This appears to have influenced the degree of change experienced by some teachers. It would appear that with the exception of the lead teachers, Corrine and Octavia, for most teachers the PD assisted them to develop an understanding of the importance of applying quality teaching principles, such as using learning intentions, ability grouping, and questioning, and the use of games in PE lessons. However, while this is evidence of changes in the way they teach PE and the positive outcomes of this for them and their students, there is little evidence to suggest that the PD has changed what they teach for PE. For most teachers at Airport School, the programme has continued to exist around topics such as athletics and winter sports. The only exception appears to be the lead teachers who have also explored areas such as cooperation and fair play and the trialling of a games approach.

The new overview that is to be developed for 2007 may result in changes to what is taught for PE, however, PD would be needed to support teachers with this.

Learning Intentions

Over fifty percent of teachers who responded to questionnaire two commented on how the sharing of learning intentions had changed the structure of their PE lessons. While teachers suggested that they had used learning intentions and success criteria in other subjects previously, the PD had provided them with the model and guidance to use them in PE classes. For teachers providing learning intentions, or negotiating these with the students generated lessons, “whereby children have a input and understand why they are doing a task” (Teacher 33, questionnaire two). In addition, some teachers such as Corrine had introduced a sharing book that was used to explore learning intentions with students and reflect on the learning after the lesson. In observing the teachers lessons it was apparent that the learning intentions were developed in conjunction with students and were kept at a simple level.

Questioning

In line with using learning intentions, some teachers have also explored the use of questioning within their lessons. Teachers commented in questionnaire two that the PD had allowed them to gain an understanding of: what sort of questions to ask in PE classes; how to ask questions; and to ask questions of students that encouraged them to reflect on the learning intentions. For example:

I'm asking what are they doing? How to move their body? Or what do you need to do to be able to get it into the target or whatever we're doing. Getting them to think, instead of me telling them. And I used to answer their questions. I'd asked them a question and answered it myself ... (Corrine, interview two)

It would appear that learning about questioning occurred as a result of two factors: the model activities that including questioning run by the SSS Adviser; and the example unit plans they received, such as TGfU-based 'Space Invaders'.

The questioning ... I really like the way that she's [the SSS Adviser] given us the resources and we've got the ... questioning's there ... I mean it's nothing new anyway. We do it in class automatically, but it's transferring those questions into health and PE, which is really good. (Heather, interview two)

Corrine indicated that teachers were feeling more comfortable with questioning, as the example plans the SSS Adviser had given to them had all the questions written out, so teachers did not need to think about what to ask. Heather felt that the use of questioning had given her students more ownership of the lesson, and allowed them to develop better thinking, problem-solving and conflict-resolution skills. However, she reflected that they still had a lot of work to do in that area. For Octavia, the use of questioning had been "quite hard", but she felt that she was getting better at it. She had found it difficult as the more student-centred approach that was used to model questioning was in contrast to her "I dictated, I gave the directions" (Octavia, interview two) approach. Using questioning had allowed Octavia to view herself more as facilitator or overseer of learning, as students got to make their own choices and decisions, and she would have input through some strategically placed questions.

Ability grouping

The PD on ability grouping appears to have been influential for a range of teachers, including those who were less confident, for example Claire, and those who had greater experience in PA, such as Octavia. While Claire had difficulties with learning

intentions, she had found the PD on using ability grouping extremely useful, as had other teachers.

I sort of thought of it [PE] as something completely alien, but it's not that far attached from teaching reading or writing. You group them and you can pick up on what they're not good at and work on that ... rather than just worry about whether you are good or not at teaching the skills ... but if they're out there and moving and ... and ... yeah, according to your own ability teach, what you can spot. You can work on that. I hadn't thought of PE as being the same as reading or writing or anything else ... science, or anything else in teaching, but in fact it is really. A light comes on ... yeah you can do the same as you do in any other subject. (Claire, interview two)

For Claire, ability grouping had been both positive and at times difficult. She had observed increases in participation, and she had been surprised at how well her students were at monitoring themselves while playing games. However, she had also found it difficult as she found it easier to manage one group, filing past, than trying to watch multiple groups, which required better management. Both Claire and Corrine commented that ability grouping worked better with their own classes, where they knew all the students and therefore could manage them better, but they found it particularly difficult when they were working within the syndicate for sport, or in Corrine's case PE. Claire highlighted that it was not possible to run six cricket games at once with students you did not know, so therefore ability grouping them was ineffective in this setting. It was apparent that for her syndicate the understanding of ability grouping had not extended as far as applying it to syndicate sport, where they continued to have vertically formed groups.

For Octavia, learning about ability grouping had been nothing but an enormously positive and practice changing experience. She had been using ability extensively in PE, and had seen considerable shifts in student attitudes, and participation.

Change in focus?

Teachers in questionnaire two commented that they had had taken on board the emphasis placed on using minor games, such as dribblers and robbers, to teach student skills. Teachers appear to have found the games fun to experience themselves as well as them being able to take the activities straight back into the classroom. As Heather highlighted, "everything that [the adviser] has taught us, I've taken back to the classroom the very next day and I've just delivered it before I forget it" (interview two).

For Claire, and other teachers who responded to questionnaire two, it would appear that they viewed these minor games, as warm up activities, but noted that students just wanted to get on and play the real sport. It was not evident that the majority of teachers saw the use of modified games as more than a broader bank of activities to draw on in the teaching of the content they already delivered. For example, Heather, was looking for Te Ao Kori based games that she could use to teach her students about baton changing. It would appear that the introduction of a games approach has not changed what teachers teach, just how they might teach it.

Evidence of a change in focus in what was taught, was apparent in discussions with Corrine and Octavia, and their students. These two lead teachers had trialled teaching interpersonal skills within their PE programme. According to Corrine, PE had been focused on movement skills and now:

... more on thinking skills as well and thinking what they do with their body to use those skills and ... the other side ... like the social/cooperative working together as well. (Corrine, interview two)

This was also a major shift for the Octavia who previously had a physical and sport-specific skills focus in her lessons. Both lead teachers had trialled unit plans provided by the SSS Adviser that allowed them to explore interpersonal skills within the PE setting. In addition, the lead teachers had also had more exposure to the TGfU approach, and had enjoyed using modified games with their classes to develop both physical skills and game understanding, such as using space.

COMPETENCE, MOTIVATION AND CONFIDENCE

Teaching physical education

The PD appeared to have enhanced teachers' perceptions of their own competence, however, only four of the fourteen teachers who responded to questionnaire two indicated that they felt more confident delivering PE. Teachers commented that an increased awareness of children's needs, new activities, and a wider range of teaching skills, such as questioning and sharing learning intentions, had allowed them to improve their teaching.

It was evident in the lessons observed that teachers were able to develop appropriate learning intentions for their students' developmental levels. However, in three of the lessons it became apparent that sometimes teachers did not have the knowledge to develop activities that would allow the students to explicitly address the learning

intentions. In addition, some teachers commented that they had difficulty developing appropriate questions to develop the learning. When they had the questions outlined for them, by the adviser or in the resources she provided, teachers felt more competent and confident.

Teachers did feel more confident using ability grouping, and the positive student attitudes and participation that had resulted from this change in approach had allowed some teachers, for example Octavia, to feel more competent teaching PE. However, as noted previously for Claire and Corrine, while using ability groups had been successful with their own class, they still did not feel confident or competent to use this approach with larger groups.

In one syndicate the senior teacher's perceptions of beginning teachers' competence, had restricted the beginning teachers chances to trial new approaches in PE, as according to the Principal, the senior teachers had insisted that she take PE for all classes in her syndicate at one time. This appears to have resulted in "one pocket of non-impact" (Principal interview) that was in the process of being dealt with at the end of 2006.

Both Corrine and Octavia were scheduled to meet with the SSS Adviser late in 2006 to look at developing the overview, however, neither was convinced that they wanted that responsibility and were not overly confident in taking on that leadership role, and all the additional responsibilities that came with it.

However, it is worth noting that Corrine had found the leadership she had taken as lead teacher had forced her to speak in front of large groups, staff and students, which she had begun to feel more confident doing. The experience of being a lead teacher, had given Corrine the confidence to apply for a senior teacher role at Airport School.

As lead teacher, Corrine had planned her own unit, and felt confident with this, however, she was concerned about trying to develop an overview for the entire school. Other teachers, including Octavia, commented that they had relied on the planning and resources supplied by the SSS Adviser, or their traditional units, to guide much of their planning during 2006, and had not yet explored planning PE differently for themselves. With SSS support being withdrawn after 2006, further research is needed to see if the change in practices demonstrated in 2006 are maintained, and what further development occurs.

Offering co-curricular physical activity

Teacher involvement in co-curricular PA does not appear to have increased during 2006, with less than 15% of teachers increasing their involvement in co-curricular activities. Those who had been involved in co-curricular activities before the PD, had continued to be involved, and had been supported by having the expectations placed on them to do playground duty reduced. This had made the coaching and management responsibility, that teachers like Octavia and Heather carried, easier to bear.

Corrine, who had become motivated to take a dance group, commented during interview two that there was a low response rate when teachers were asked to be involved. Her experience taking a hip hop group with seniors at lunchtime had turned out to be a “nightmare” as she had not know all their names and found it hard to control all of them. As a result Corrine reported having lost some motivation, but had persisted, just working with smaller group.

I mean I don't like doing it myself either because ... you don't know the kids ... 'cos when you're in the juniors you don't really know the older kids as much unless you've been ... grown up through them from when they were younger. But the main thing that puts me off is when you go to the interschool, 'cos then you have to be the referees between the games and that's what puts us off. 'Cos then people are on the sideline calling out remarks and that. (Corrine, interview two)

It would appear that some teachers at Airport School need more support before they are likely to feel motivated and confident to assist with co-curricular PA.

MOVEMENT SKILL DEVELOPMENT

Determining student progress

The lack of an explicit focus on movement skill development within the PD appears to have limited teacher progress in this area. As highlighted by Claire, there was still a need for her and other teachers to have access to information about movement skills, how to teach these and how to assess them. It would appear from teacher responses that the PD did not assist them to monitor student progress any better. An exception appears to be Corrine. For her, having to develop and ask questions of students within the lessons had forced her to break skills down more, for example, when throwing to stand side ways. She had used SSS resources, and the *Fundamental Skills* manual to provide her with ideas. This planning process had helped her to monitor student completion of discrete skills, and therefore gauge their progress to some degree.

Evidence of contribution of physical education

There is no evidence to suggest that assessment practices, or monitoring the contribution of PE to movement skill development had been a focus of the PD that all staff at Airport School received. Therefore, teachers appear to have continued using their previous methods of assessment as a way to gather evidence about student progress with movement skills during PE lessons, including observations and checklists at the end of each topic. In addition to these methods, it would appear that some teachers, more specifically Heather and Corrine, have transferred their understanding of assessment practice from other curriculum areas and used it within their PE programmes. For example, Corrine had not only been using checklists, but had started taking photos of students demonstrating skill learning, and recording students progress against the learning intentions and success criteria. Heather had been having students record written reflections of their progress towards the learning intentions, which she had been using as evidence of the learning that was taking place in PE.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

Traditionally, the PE programme was based almost exclusively on Achievement Objective B1 in HPENZC, with student assessment based on their ability to perform particular movement skills, such as throwing a discus, or swimming a set distance. After the PD, student assessment did not appear to have changed, with the focus remaining on movement skills. The use of sharing books and reflective statements by some teachers could be regarded as evidence of student achievement linked to the learning intentions, which may or may not have related to the curriculum levels of development. The only evidence of how student progress is linked to curriculum or developmental levels, was in relation to the unit plans provided by the adviser, that had learning intentions linked to the curriculum. Teachers did not appear to make links between student achievement and the curriculum. However, it is worth noting that one of the intended outcomes of the revision of the school overview for PE, is to make clearer links to the curriculum. Further research is needed in 2007, to monitor whether or not teachers were developing programmes of work that linked to the curriculum and monitoring student progress in relation to developmental levels.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

All teachers commented that they had observed a more positive attitude and increased levels of motivation in students towards participating in PE classes. Of the fourteen teachers who responded to questionnaire two, ten (71%) suggested that student attitudes had improved as a result of either the new activities or having the opportunity to work in smaller groups. The ability grouping that teachers had been trialling in PE classes appears to have had an impact on how both teachers viewed student attitudes, and how students felt about being involved in PA. Octavia suggested that her “not-so-able children felt less threatened” and therefore were more positive about being involved. Claire’s Year 5-6 students commented that they liked it better in smaller groups because “you got more turns and it wasn’t so embarrassing if you did something wrong, because everyone wasn’t watching.”

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. (Claire, interview two)

As reflected in Claire’s comment, other teachers had made links between the ability grouping, student attitude and therefore increased participation. Teachers suggested in questionnaire two that participation had increased as students:

- Who had been reticent about joining in are participating better (Teacher 36);
- Enjoyed working as a team more than working individually (Corrine);
- Loved the new lessons with small group involvement, and new games and equipment, (Teachers 27 and 37); and
- Knew what was going to happen so therefore fear of the unknown disappears (Teacher 29).

The Principal indicated that it appeared that students were more willing to engage and participate in PA during classroom time, and were in need of less coaxing. Students in all four classes who were interviewed commented that teachers were very encouraging, and introduced new games or changes rules in old games to make it better for everyone. They reported using some of the games that they had learnt in PE, at break times.

The learning in Claire's and Heather's classes had predominantly remained on the development of movement skills. While students in Corrine's and Octavia's classes indicated that they had learnt about: keeping each other safe (Year 1, Corrine's class); being more cooperative (Year 4, Octavia's class), through playing fair, not putting each other down or shouting at others, and not hitting others when playing a game.

Parents indicated that their children had been learning:

- Basic skills and coordination; team work; Running, soccer, game play; To have fun and also be careful of others exercise makes you stronger and healthier (Year 1, Corrine's class);
- How the body works; playing sports/activities is fun, the PE keeps you fit and healthy, and is very challenging; keep fit, active, healthy and you are more alert and learn better in class; and respect and discipline (Year 5-6 bilingual, Heather's class);
- That cricket can be fun; skills; how to exercise and how to play sports; coordination; Athletics; jumping and running skills; knowledge of new sports activities (Year 5-6, Claire's class);
- That sport is good for her physique; how to talk to people nicely during physical education and how not to put down other people's ideas; to catch balls and run; about teamwork, respect and coordination; and new game strategies through PE lessons (Year 4, Octavia's class).

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

Teachers had not noted any change to students' movement skills in extra-curricular activities, as this had not been a focus of the PD. However, 84% of parents had recognised an improvement in their children's movement skills throughout 2006. Most parents put this improvement down to students being involved in PA both in and out of the school setting. Three parents (of the 32 parents who responded) suggested that improved teaching of PE and more encouragement from the teacher during class time had made the most difference for their children.

Professional development and facilitation

There was some initial resistance to the PD, before teachers began to see the benefits for students, and realised the benefit of the PD. Octavia, commented that like others,

to begin with she did not like the set of the PD and was not interested in being involved.

I know another few teachers were like, "What a nuisance. This is just a bother", but now they're ... recently they've been like, 'Wow, it is helping. It's helping a great deal.'" (Octavia, interview two)

As a lead teacher Corrine had been disappointed in the response from some staff, but had recognised that "most people have come on board, a few people are starting to come on board now more ... as they can see more activities happening with their own class they can see it's more beneficial" (interview two).

Teachers' particularly valued learning about:

- How to get children active more often in fun way therefore encouraging higher participation;
- Ability grouping;
- Encouraging children to discuss strategies;
- Sharing learning intentions with students and questioning skills;
- Learning new physical activities and how to modify to suit the needs of the children, how to make it more interesting;
- Ideas for use in class. What sort of questions to ask during PE classes; and
- The practical workshops.

Teachers commented on the way they were able to participate in activities that they could immediately use in the classroom. Claire told of how the experience of playing the games herself had made her feel confident enough to try them with her class, and how they were easier to understanding because she had been involved, as opposed to having to interpret them from a book. To support teachers' the adviser had "provided lots of resources for activities, like an invasion unit, and the website that could be used for ideas" (Octavia, interview two). The adviser had also reminded them of resources they may have used previously, such as *KiwiDex* and *Fundamental Skills*.

Corrine had been frustrated by the staff turnover during 2006 and the expected turnover for 2007, as this had made it hard for all teachers to have the full year's benefit from the PD. She felt that the PD would have been more successful if they had had:

... someone from each level of the school there [at cluster workshops], instead of just having two teachers, because April didn't even get to go to half of them, I only got to go by myself. We were short of relievers, it was so bad in the school we had to split classes and all sorts. (Corrine, interview two)

Corrine and Octavia did not feel that the changes seen in 2006 would be maintained or enhanced without further input for external organisations, particularly SSS, during 2007. They indicated that frequent turnover of staff, and unwillingness by some staff to engage in further PD would make changing the PE programme unsustainable.

It is worth noting that the SSS Adviser working on the PD in this school had a particularly large job, working with each of the twenty-three teachers and their classes, as well providing repeat visits for some teachers, and running staff meetings.

Physical activity culture

The PD appears to have impacts on aspects of Airport School's PA culture, including curriculum teaching and learning (detailed earlier), organisation of school timetable systems, and to some extent co-curricular and community links.

A major organisational change had occurred as a result of the PD that impacted on broader curriculum teaching and learning in PE. Corrine had made changes to the hall timetable:

... so, I've done the new timetable. We've all got our own half-hour slot as well as some combined slots for teachers that don't feel confident. (Corrine, interview two)

In addition, teachers could book additional hall time if there was a space free, as Octavia had done. This timetabling change had implications for the role that syndicates played in curricular PA. The senior syndicate still operated with one senior teacher taking a massed PE session. The junior and middle syndicates had stopped syndicate PE, while maintaining syndicate sport. This has freed teachers' up to timetable and teach their own PE classes, something Corrine had particularly wanted to achieve. The Principal was also keen to see this model used in all syndicates in the school as she felt it was better to have one class to one teacher, as opposed to one teacher taking four classes, while the other three teachers "managed the crowd". While the change to the timetable appeared to have been positive, Octavia and the Principal noted that there were often times when teachers were not using their timetabled slot in the hall, and therefore doubted that those teachers were offering PE.

An interesting issue at Airport School was the apparent lack of willingness to take students outside for PE lessons, even though this often happened in summer terms for syndicate sport. Corrine suggested that teachers found it easier to run lessons in the hall for two reasons; firstly the equipment was stored there and that made it easier to access and organised; and secondly, managing the students in the confined space of the hall was easier than having them all over the field.

To a lesser extent Airport School had experienced some changes in co-curricular PA and community links as an outcome of their involvement in the PD. The major development in these areas was the association established with the RST in running a parent activity evening that allowed parents, teachers and students to be involved in a series of physical activities. For Corrine, understanding that she could access the RST equipment shed has given her many ideas for how she might run her PE lessons in 2007.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

Airport School perceived itself to be an active school, with a high percentage of students being active at break time and involved in school sports teams. The staff and parents identified the following factors that contributed to the PA culture of the school, including:

- Access to PA opportunities during class time in the form of PE (81% of parents) and school sport (84% of parents);
- Teachers' encouragement of students to be physically active, with over 85% of parents indicating that the school was good or excellent at this;
- Some teachers who were willing to take responsibility for coaching an organising teams, and the support these teachers were now receiving through the reduction of duty time;
- Access to a large indoor space that could be use for PA;
- A range of PA equipment available to students, such as balls, ropes, racquets, adventure playgrounds and felids and court spaces;
- Students who took on the role of sports monitors and supported other students to be active by running games at lunch times; and
- Access the school had, and made use of, to the local aquatic centre.

CHANGE PROCESSES AND FUTURE STRATEGIES

The SSS Adviser has played a vital role in the success of the PD at Airport School. By making an effort to visit each teacher and build a rapport with them, it would appear that the PD has been able to have impacts across a wide range of teachers. With the changing nature of lead teachers and staff at Airport School, the process of change needed to be supported by the adviser. In addition, the Principal and deputy Principal have, according to Corrine, been assertive with teachers who were less willing to trial new ideas or attend staff meetings. Staff involvement in other PD programmes has had some impact on levels of involvement, with Heather commenting that she would have loved to take on a lead teacher role, but other PD commitments in oral language had restricted this.

Teachers at Airport School identified the following strategies that would be needed to assist them in developing PA, curricular and co-curricular, in their school, including:

- On-going PD from SSS in the form of, more ideas and activities for in the classroom, assistance with the school-wide plan, demonstration lessons, wet weather ideas, easy access to resources;
- A clearer delineation of responsibility for PE;
- The development of an overview for PE;
- The purchase of more equipment to support PA;
- Timetabling, so that each class has opportunities to deliver PE independently of the syndicate; and
- Models for encouraging parents and teachers to increase their involvement in co-curricular activity. One idea that was being floated at the end of 2006, was that every teacher would be expected to take responsibility for coaching or managing a sports team or PA group such as dance.

AIRPORT SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Changes to the way teachers engage students in PE, through ability grouping, sharing learning intentions and using questioning, appear to have positive outcomes for students in terms of attitudes and participation;

2. Teachers needed opportunities to develop curriculum and content knowledge as well as general pedagogical knowledge in order to develop PE programmes to meet the needs of the students;
3. Lead teachers needed additional support to assist in the professional development of other teachers, especially when the ratio of lead teachers to teaching staff was so small;
4. Advisers working in schools of Airport's size, needed additional time to provide school-wide support.

CASE STUDY TEN: OTTER SCHOOL

Otter School 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). Seven teachers completed questionnaire one, and six completed questionnaire two, of these six out of seven had been teaching for more than 15 years, and their ages ranged from thirty-six years to fifty-six years.

Three teachers had agreed to be involved with the in-depth data collection, which included two interviews, a classroom observation, and the completion of both questionnaires. The Principal had selected these teachers, (referred to in this case study as Briar, Anthea, and Francis), because they all had different capabilities when working with their students on PA. Briar taught the Year 1 class, Anthea the Year 2 class, and Francis the Year 3-4 class. The classes, and their teachers were observed during a PE lesson, a group of students from each class interviewed, and the parents of all students in the class were sent a questionnaire. The response rate from parents was 57%. The lead teacher (referred to in this case study as Berta) in Model 2 of the PAI, was not interviewed, she did complete both questionnaires.

With the exception of one teacher, all staff had participated in some PD that had focused on PA prior to the school participating in the PAI. Anthea had come to teach in New Zealand, and had no training in the curriculum document (HPENZC), although she had read the curriculum documents to gain an understanding of HPE in New Zealand. For the other teachers PD had been focused on planning and teaching PE as a classroom teacher. During 1999, two teachers, including Francis, had been lead teachers for PD that was focused around the initial implementation of the HPENZC. Some teachers had also been involved in some personal skills development, associated with particular sports such as rugby and cricket.

Otter School was committed to providing ongoing professional learning opportunities for their teachers, and had recently completed the Assess to Learn and Numeracy contracts. Francis commented that the staff had “been tied up in a lot of other contracts, which left not [enough] time or money for other PD, including [that associated with] PA” (interview one). In 2006, Otter School had been involved in the

PAI, as well as belonging to an ICTPD cluster. There was also an emphasis on teaching environmental skills in the school.

PHYSICAL ACTIVITY PRIOR TO PHYSICAL ACTIVITY INITIATIVE

Located on a small block of land in the middle of a residential area, Otter School had used the limited space available to maximise any opportunity for their students to be physically active. The school had court space and a grassed area, approximately the size of two basketball courts, a senior and junior adventure playground, and many large trees that the students were able to climb. The teachers had access to a hall, located on the school grounds, which the school could use whenever a community group was not utilising it. However, the school was unable to book the hall.

Four teachers indicated that the school successfully promoted health-enhancing PA behaviours, through whole school community policies and programmes; three teachers felt that the school still had some work to do in this area. While six out of seven teachers perceived themselves to be involved in delivering PA as classroom teachers, no teacher held the role of coach or manager of a school sports team. One teacher had the role of sports coordinator, and two other teachers were responsible for taking teams to cluster events. Briar commented, “Teachers are not expected to take teams” (interview one) and therefore, it did not often happen. The teacher in charge of PE and sport would gather information about walks or bike-a-thons from outside agencies, and then inform students about any physical activities available in the area.

Curricular physical activity

The school’s curriculum programme offered a range of PA opportunities including PE, fitness, and Waterwise²¹.

PHYSICAL EDUCATION

The PE component of the programme was based on an odd and even year cycle. Teachers understood that they had to focus on each term, dependent on which student level - junior, middle or senior, they taught. However, the teachers found it difficult to teach from a three-level programme, and instead, they used a junior or

²¹ Waterwise is a New Zealand initiative to teach children water safety and aquatic awareness in a safe controlled marine environment. For more information visit www.waterwise.org.nz

senior focus to base their planning on. Each term the teachers came together to plan for the term, and then were assigned units to develop. Unit planning tended to correlate with the cluster schools' sporting calendar. For example, "The athletics used to be term one, but cluster athletics changed to the end of the year, so we decided to do athletics prior to that" (Francis, interview one), that is, at the beginning of term four. Within the programme, units include athletics, cross-country, gymnastics, dance, ball skills (rugby, soccer), and cooperative playground games.

While there was a programme for PE, and the less confident teachers could rely on other teachers for support, the Principal was not convinced that all teachers were delivering quality PE. This was one of the reasons the school joined the PAI. Common elements of the teachers' PE lessons were warm-ups, skill teaching and practices, minor games, and a warm down. Two teachers commented that they also included discussion and reflection. Two other teachers commented that they included fitness in their lessons. For one teacher this involved linking a particular PA to the chosen letter of the week, for example, if Li was chosen then limbo dancing would be the activity for that week. Kk – ball kicking, and Hh – hula hooping (questionnaire one). Four teachers, responding to questionnaire one, reported teaching PE once or twice a week, and their lessons lasted between twenty to forty minutes, The other three teachers suggested that they taught PE three to five times a week, but also included fitness as part of their lessons.

FITNESS

In the senior and middle school, a fitness programme was delivered three days a week, usually centred on JRFH or Jump Jam, but also included relays and running around the block. The junior school had fitness every morning for approximately ten minutes, which involved running, relays, skipping, checking heart rates, and had recently included Jump Jam and JRFH. Teacher felt that this time gave students an opportunity to improve their fitness and be energised for further learning.

WATERWISE

All teachers commented that it was difficult to teach aquatics, because the school did not have access to a swimming pool. To ease this situation, the older students (Year 6) were involved in the Waterwise programme, which meant the students went to a local beach for extended periods, during terms one and four. They were placed into

small groups to learn about and experience sailing, canoeing and boogie boarding. The teachers felt that this provided students with the opportunity to become very confident in the water. There had been appeasement among the teachers because they knew that most students in the school had attended externally provided swimming lessons, although Anthea, Francis and Briar, commented that they felt disappointed that they could not contribute more to the students' water skill development.

Co-curricular physical activity

BREAK TIMES

At break time, teachers did not run organised activities for students, because they felt that the students did not need any help - they were active of their own accord. The three teachers interviewed thought that the majority of students were very active at break times, and so they were puzzled and disappointed when they noticed a small group had recently become more interested in playing with blocks, under the covered areas of the playground. Most students were engaged in racing around the playground, playing on the adventure playgrounds, and playing on the fields and courts using bats, balls, and skipping ropes. Students had two containers of equipment, monitored by the Year 6 students that they could use to support their play. They had been able to take equipment from the PE shed, but gear had gone missing, and consequently the students had lost this privilege.

FRIENDSHIP BUS

The school ran a friendship bus every lunch hour for students who did not have anyone to play with. If students were in this circumstance, they would gather under the friendship bus, rainbow sign and senior students, who had been trained as leaders, would run organised games and activities for them. The leaders were trained by a Resource Teacher Learning and Behaviour (RTL B), and had been issued with whistles and easily identifiable hats. The friendship bus had a special allocation of equipment that was only available to this group. Different senior students were available to run the friendship bus every day, and it was popular with junior students, who would join in, not only because they were lonely, but also because the activities were enjoyable.

SCHOOL SPORTS

With a small school population, Otter School struggled to run school sports teams, although there was a girls' netball team. Instead, they would regularly join up with other local schools to form teams to compete in the cluster competitions. A parent of a Year 1 student was working on establishing a junior netball team. Parents were supportive of PA at the school and of sport in particular, and had transported students to events.

At the end of each term, the teachers' PE lessons focused on a sports event, if one was available. Otter School ran swimming sports, an athletics day, and a cross-country event, often in conjunction with their local cluster, as this meant that the events were well attended.

WALKING SCHOOL BUS

A walking school bus had previously been operation, but at the time of the interview one, it was not well supported. Teachers had chosen not to be involved.

THE PHYSICAL ACTIVITY INITIATIVE

Unlike the other schools in Model 2, Otter School had received intensive support from both the local SSS Adviser and the RST. The advisers from both organisations had from the beginning, worked together to deliver a PD programme focused on curricular and co-curricular PA. The advisers had made it clear that the SSS Adviser would be responsible for PE, and the RST Adviser would focus on co-curricular and extra curricular PA.

The lead teacher, Berta, and a Reading Recovery teacher had attended a series of cluster meetings run by SSS and the SSS Adviser, in conjunction with the lead teachers, had run staff meetings that focused on quality teaching, *Moving in Context* and using games to teach skills (The TGfU model). The adviser had taught model lessons with each of the six teachers, then observed them taking a lesson, after which they were provided with feedback. The adviser had made repeat observations, when possible or where they were most needed.

The school also worked extensively with the RST. Early in the year, Berta and another teacher attended the Active Schools Toolkit training. They had then presented the Toolkit to the other six teachers at a staff meeting, and had given different teachers

parts to take home and explore. In addition, the RST Adviser ran a series of sessions for the entire staff to demonstrate some games or activities they could use for PA. The school was also involved in a series of school cluster meetings held in the afternoon, which were run by the RST. At each meeting, different teachers, including the Principal had explored some new resources and different activities that were aimed at assisting them in helping students to become more active.

Otter School staff, in association with SSS and the RST Advisers had organised an information evening for parents. This involved a talk from both advisers, and a Jump Jam session that was run by the children, for the parents to participate in. The school hoped that this evening would promote home-school partnerships, and give the parents positive and consistent messages about curricular and co-curricular PA.

IMPACTS OF THE PHYSICAL ACTIVITY INITIATIVE

Effective teaching in curricular and co-curricular physical activity

TEACHER CONCEPTUAL CHANGE

It is difficult to determine the extent of any conceptual change that had taken place for the teachers at Otter School, as the first round of data collection occurred after they had been in a staff meeting, when advisers had explained the difference between PA and PE. Teacher responses in both questionnaire one and two describe PA as a time for students to be active, move their bodies, and exercise, whereas PE was a time when students learnt skills, developed positive attitudes about PA, were involved in discussion, and looked at things like teamwork and cooperation.

The only apparent shift in teachers' understanding of PE was related to how it was taught, which is detailed more in the following section, and that their fitness programmes did not constitute PE. For some teachers, they would be required to offer PE lessons in addition to the fitness programme that ran almost daily

KNOWLEDGE, UNDERSTANDING, AND SKILLS IN PHYSICAL EDUCATION

The teachers had found value in the PD and developed new knowledge, skills and understandings that had assisted them in teaching PE. It would appear from the teacher comments that how they taught PE, had changed, while the content of the

lesson remained reasonably similar. They had made the following changes to their teaching: the use of learning intentions, the use of a thinking book, and the introduction of new games, all of which were aimed at making their lessons more relevant to the learning needs of their students.

Transference

Teachers commented that they had transferred the knowledge and skills developed in the Assessment for Learning (AFL) contract, and incorporated them into their teaching of PE. The three teachers interviewed commented that the changes they had made to teaching PE reflected changes they had already made to teaching in other curriculum areas, where they had used learning intentions, success criteria, thinking books, and student reflection time, to better meet the needs of their students.

The way I teach [PE] is different now. I involve the children a lot more, whereas, before it was all teacher-led and you know, they just did what I asked them to do, and that was it ... Since we started AFL ... it is all [about] ... the learning intentions and the success criteria ... because we did the Literacy Project and the Numeracy [project] ... we [had] already trialled that. So, I was quite used to bringing them [students] back and talking about what we had done ... So that was there [in the other subjects], but with PE it was still not quite there yet, but I think over the last year I have definitely changed. (Anthea, interview two)

Teachers commented that they had not thought to use these AFL techniques in PE lessons, before the SSS Adviser had modelled them in a session she had run. Once they were aware that they needed to use learning intentions for their PE lessons, they had started to develop them for each lesson. They had also started to use thinking books, which they had learned to use during the Numeracy contract, to reflect on the PE lesson. This comment shows how the PD had changed the way Briar thought about PE:

It is like trying to get it [the lesson] driven more by the children. I do it [the new ideas] in other curriculum areas, whereas I had never thought about it [for PE] ... Even like the PE book, the thinking book, and thinking about where our next learning is going to go. Therefore, that is all new for me and I have found that stimulating, and the kids are far more sort of 'in-tune'. (Briar, interview two)

In addition to bringing AFL practices into their PE lessons, teachers had also worked on developing questioning techniques, and more student-centred approaches. All six teachers who completed questionnaire two, including those who were interviewed, commented that they had included use of discussion time within their lessons, and

were asking students more questions about their learning. Berta felt that the use of “discussion time in the lesson ..., often initiated by children, allowed the lesson to evolve more according to the needs of children, rather than following a rigid plan” (questionnaire two). Briar, felt for her, this meant “within a PE lesson, before I would ... go ‘flat tack’ for ...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. They are [now] having little breaks within [the lesson] as well” (interview two). Anthea commented that she was also using questioning, however, based on her observed lesson and comments made by the Principal, there were concerns about Anthea’s ability to develop appropriate and open questions within her lessons. In particular, while she had asked questions, there was often not enough time given for her students to think and then answer, before Anthea provided them with an answer.

New activities and ideas

Teachers particularly valued the new games and ideas for activities they had received from both SSS and the RST. Anthea commented during interview two, that the SSS and RST Advisers had showed them different activities, and played games that teachers could take away and immediately use. This was the case for all three teachers interviewed.

Berta understood the games as linked to the; TGfU approach, particularly the net and wall games, and invasion games. However, for other teachers, it would appear that the games were viewed as an alternative way to teach specific movement skills. During interview two, Francis discussed the use of games:

They [advisers and lead teachers] showed us [how] to teach skills by using, whenever possible, games. So they showed us lots and lots of different sorts of games that taught a skill ... you might be doing a whole lot of different things, but you are [still] working on a particular skill. That was a bit different, to try to do that as much as possible, where it fits. It was a bit hard to find a game that went with high jump. But with anything to do with balls, throwing, catching, [or] dodging ... [that is], balance and rotation ... all those things you could do ... using games. (Francis, interview two)

The *Moving in Context* series that the PD programme had used, supported skill development by using mini games and activities, and had been widely used by the teachers interviewed. Anthea had used this resource, and it had provided her with ideas that changed the way she delivered PE, “It tells you all the learning intentions. It tells you exactly...what to do. It even [tells you] some of the questions, the types of

questioning [to use]" (interview two). This resource had provided her with an approach that she said she never would have used before. The use of the activities out of this resource, and the broader range of small games they had learnt from the advisers, also appears to have helped the teachers to use smaller group activities with their class, rather than only using a whole-class approach. Teachers had felt that this had given their students more ownership of the lessons, had changed the structure of the lessons, and had provided students with more opportunities to practice their skills.

The Principal felt that teachers were taking their class out for PE lessons more frequently because of the PD programme, yet expressed concern, that from her general observation of her teachers, much of what was happening, in some classes anyway, was still just activity that had no learning focus. Anthea's lesson, observed as part of the research, had indicated that this might be the case. While her lesson was packed with activities such as throwing, skipping, dribbling, and relays, there did not appear to be a clear learning focus. The students were 'busy, happy and well-behaved', which may have given Anthea the impression that learning was occurring.

Future plans

The lead teacher, Berta, had worked with the Principal to develop a draft overview for the PE programme, which they had presented to the staff. In the overview, they had included units based on ABL, Te Ao Kori, and particularly TGfU based units such as invasion games net, and wall games. The new overview had, as its intention, a goal to move learning in PE beyond the traditional programme, that was linked to the cluster interschool sporting calendar, and towards addressing the learning needs of students. They recognised that further PD would be required in the school to ensure that all teachers had the knowledge and skills to deliver the new overview. The emphasis in any new PD programme would need to focus on the TGfU approach, as it appeared that only the lead teacher, Berta, had a 'good' understanding of this.

Further research is needed to see how successful the implementation of this overview is.

Teaching physical education

All teachers had reported feeling more confident about teaching PE, primarily due to the broader range of activities they now had available in their teaching repertoire. The increase in Anthea's confidence is particularly noted:

I am much more confident now with teaching ... I enjoy it [PE lesson] with the children, which is good, and we have a bit of fun ... whereas before, I was really stressed because I thought, "No, this is what I have to teach them," and it was not fun for me. I do not think... I mean, maybe the children enjoy it. I know they did to a certain extent, but I think, now they enjoy it a lot more, and I know I certainly do. (Anthea, interview two)

The Principal had identified Anthea as not being as capable as other teachers at teaching PE, but was pleased to report an increase in the number of times Anthea took her class outside for physical activities. The Principal still had some reservations about Anthea's competence in delivering PE, reflecting that there was still a lot of PA without clear learning intentions, or discussion with the students, but felt that there was some progress, and that this was reflective of Anthea's increased confidence in teaching a PE lesson.

The evidence would suggest that teachers also felt more confident as they had a range of resources to draw on for their teaching, as well as activities they had completed in workshops and meetings. They appeared to have benefited from the lessons demonstrated by the advisers. Briar commented that the best way for her to learn new ways to teach PE, was to have someone come in and demonstrate for her, or to present her with ideas and resources she could use in her lessons. Anthea had used *Moving in Context* as her guide on what to teach, and how to teach, and Francis reported using the ideas from the adviser's sessions to guide her teaching. Berta, as lead teacher was also feeling more confident and motivated to teach PE, but she felt that her ability to demonstrate an improved level of competence in teaching PE had to wait, as she was still developing her understanding of this 'new' approach.

The support from the advisers had clearly had an impact on teachers' confidence, and their perceived competence in their own ability to teach PE, however, a more accurate indicator of change will be the ability of the teachers to be able to teach successful PE lessons in 2007, when the support they received in 2006 is not as available. Further research is needed to determine if the teachers had become reliant on the advisers.

Offering co-curricular physical activity

There had been no apparent change in teachers' motivation, or confidence to engage in co-curricular PA, that could be attributed to any PAI influence. Before the PD programme in 2006, teachers at Otter School had recognised the importance of ensuring that students had opportunities to engage in co-curricular PA during break times, school sport days, and during the Waterwise programme. They had continued to provide, during the PAI, the same co-curricular activities, and daily fitness sessions, but had not seen any need to add to them.

The school had, supported by the RST, run a Push Play day, and the teachers supported the students' participation in the Push Play challenge. The school had also promoted Kelly Sports²², as an after school sports programme run by an external organisation, but individual teachers did not appear to be offering additional co-curricular PA.

MOVEMENT SKILL DEVELOPMENT

Determining student progress

The use of questioning in the classroom by teachers had assisted them in monitoring the students' progress with movement skills. It would appear that by asking students what they were learning, and checking their progress against designated success criteria, teachers had been able to determine student progress from students' anecdotal accounts. Teachers had also used observations and checklists to monitor progress. Using this information, teachers commented that they had seen an improvement in student movement skills. They had also become more aware, during their lessons, and had been able to slow a particular lesson down, or repeat a learning intention when they, or the students, had felt the success criteria had not been achieved.

The focus of the *Moving in Context* series appeared to have assisted teachers in determining students' abilities with different types of movement skills, nevertheless, many of their judgements in this area had continued to be subjective. Francis

²² Kelly Sports is an after school programme, that offers paying students an opportunity to experience a range of sports, games and activities.

commented that there was still a need to explore “ways that we can assess using the different way we are approaching physical activity now... we need to look at what we are assessing and how we are assessing” (interview two).

Evidence of contribution of physical education

During the PD programme there had not been a focus on how to gather evidence so that teachers could measure how PE contributed to movement skill development.

If someone asks me about any child, I can give a good report on that child, but I have not written anything down. Therefore, it is just observation, just self-assessment (Anthea, interview two).

This comment reflects the approach three out of the six teachers appear to have had taken towards evidence gathering. The use of thinking books had assisted all teachers in keeping some record of the different classes’ progress in particular movement skills, for example, running and skipping. Even so, teachers did not see this as evidence gathering; in comparison to the way, they viewed the gathering of evidence for numeracy or literacy.

EVIDENCE OF STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES.

Because the PD did not include anything about evidence gathering for student assessment, there was little evidence that teachers had focused on making links between student progress, and development levels, or achievement objectives. The feedback given by the SSS Adviser, after the teacher observations did not address this issue either, or give guidance about planning a lesson. The lessons modelled by the adviser, and the teachers’ use of resources from *Moving in Context*, had, apparently, helped teachers develop learning intentions, (from HPENZC) for their PE lessons, but the teachers did not indicate that they had worked explicitly on making links to the curriculum document.

Student achievement

STUDENT KNOWLEDGE, ATTITUDE AND PRACTICE

Teachers reported that changes in the way they taught PE had made their lessons more enjoyable for students, and had enhanced student attitudes, and participation in PE classes. Teachers, at the beginning of term 2, had felt that most students were already positive about PA and engaged enthusiastically in PA during break times and

in PE lessons. However, Anthea felt that her students were now “a lot more enthusiastic, and...more involved and they know why they are doing things” (interview two). All six teachers who completed questionnaire two, commented that they felt the students now had a more positive attitude toward PA, and thought that this had resulted from them ensuring that students understood what they were trying to learn. Students commented that the use of games, and opportunities to work in smaller groups, had made PE more “fun” (Year 3 students), and had allowed them to “choose who they worked with,” and “to make new friends” (Diamond and Martha, Year 2).

Francis commented:

Some of the children...the one or two who were not so enthusiastic, seem more ... interested, and more keen. Maybe in a game it does not [matter] ... if you do not have the skills. You [the students] do not stand as much as perhaps you might if ... everyone [was] having a turn at doing something. Therefore, that might be why. I am not sure. (Francis, interview two)

Teachers had observed students playing the games that they had learnt in PE classes during break times. While these teachers did not think that activity levels at break times had increased significantly, they thought that student play had become more creative. The students were now also politely asking for access to a wider range of PA related equipment for their games. All thirteen students interviewed had commented that they were ‘busy’ running around and playing games at break times, including tiggly and soccer, as well as using equipment, such as the adventure playgrounds, monkey bars, and the “box from the PE shed that comes out at lunch time” (Donald, Year 3).

It was apparent from the student interviews that some learning had taken place during the PE lessons they experienced in 2006. Year 3 students recalled learning how to skip, play new games, and a range of discrete skills such as high jump. The Year 2 students indicated that they had learnt to dribble a soccer ball, throw and catch beanbags and balls, and to skip. The Year 1 students had been unable to remember back beyond last week’s lesson, but could provide detail about how to run faster, and what you needed to do with your body, to make you fast. Teachers had thought that the use of learning intentions, and the discussion within lessons and reflection at the end, had helped students develop their thinking skills. Over 30% of parents had been unsure or did not know what their children been learning in PE. Other parents had suggested that their children had predominantly learnt skills (skipping, catching, kicking, games and aerobics). Only a few parents (less than 5%) identified other

learning outcomes such as the development of confidence, cooperative skills, and the importance of being physically active.

It would seem apparent from the student comments, that knowledge relating to why you need to exercise was the most common learning that had taken place for them. Students consistently commented about the need to be fit, and how they “play lots of running games, because that makes you fit” (Sue, Year 1), and that the “more you do the fitter you get” (Glen, Year 3). Of concern was the students’ understanding of what constituted fitness, with the majority viewing this as being able to run without getting puffed. The understanding, indicated by the comment, “[You] measure around your waist” (Student, Year 3) to know if you are getting fitter, was also of concern. This was not a practice within the school, and this student indicated that she also did this at home. Students have access to a wide range of sources, including the media, peers, and families, as they develop knowledge about PA, their own bodies, and fitness, however students comments such as those above, highlight the need for schools to be conscious of how they might contribute to or challenge particular messages about PA and the body.

Further research, if considered feasible and warranted, will be needed to determine how the school programme and school practices contribute to or challenge these particular messages.

STUDENT MOVEMENT SKILL DEVELOPMENT IN EXTRA CURRICULAR ACTIVITIES

Students indicated that they had improved their range of movement skills. Teachers had also observed student improvement in movement skills during class time, but were unable to comment about how it had developed outside of class time. Over 75% of parents indicated that their children’s movement skills had improved during the course of 2006, attributing this to the following:

- Opportunities and encouragement to be active at home;
- Involvement in external sporting teams/organisations;
- Growth and development; and to a lesser extent
- Student opportunities at school, in both curricular and co-curricular activities were encouraged.

Professional development and facilitation

Otter School had had a positive experience of intensive PD delivered by advisers from both the SSS and the local RST. The Principal commented that the two organisations had worked well together in addressing the needs of the school, and of individual teachers. The SSS Adviser had taken responsibility for exploring the teaching of PE using different contexts, and provided the teachers with a range of different resources, including games, and activities. The RST Adviser supported the school by assisting with the parent night, and informing the school of any PA event occurring in the community (triathlons, runs). They had also talked at assemblies about events that students could participate in, and had provided opportunities for teachers, both in school, and at external cluster afternoon meetings, to experience a wider range of games they could use with their students.

The teachers had found the following aspects of the PD particularly useful:

- Having a balance between theory, and practical content during SSS run staff meetings;
- Being able to play games, and do activities that they could immediately try in the classroom;
- Obtaining ideas about how to teach skills;
- Having the advisers teach each class, while the teacher observed; and
- Having the advisers observing them in their classrooms and then the advisers giving them feedback on how they taught.

Feedback to teachers had focused on different aspects of quality teaching. For example, Briar's feedback focused on sharing learning intentions, discussing success criteria, providing children with time to practice, and then apply their learning, reflection on learning (thinking books), and reference to prior learning/knowledge. However, it was not apparent that teachers had received feedback on the practical content of the lesson, or the links between the activities used, and the learning intentions. The lack of feedback on subject specific pedagogies and content knowledge may have contributed to some teachers' capacity to design PE lessons, in comparison to simply providing PA opportunities.

In addition to support received from the external advisers, the teachers' felt that the lead teacher had made information accessible, and provided extra ideas that helped

them with their teaching. The Principal felt the school had benefited from having a lead teacher. However, Berta and the Principal suggested that it would have been advantageous if all teachers had had an opportunity to go to a cluster meeting, or to another school to observe different PE programmes, as this might have helped them develop further ideas for teaching PE.

The Principal commented that the support from the RST had assisted the teachers develop stronger home and school as well as community links, and mentioned that the RST would continue to work with the school in the same capacity in 2007 to help sustain physical activity.

Physical activity culture

The dual focus on curricular and co-curricular PA throughout the PD programme had enabled the teachers, and the school community to explore all aspects of their PA culture. As the Principal noted in a 2006 newspaper article, "We want to build a strong physical activity culture in which everyone values the importance of being physically active." Throughout 2006, the school had made progress toward this goal, and had shown change in the following areas:

- **Curricular physical activity**

Improved teacher knowledge and understanding of PA, and improved student learning in physical education lessons.

In 2006, the Principal and the lead teacher were redeveloping the PE long-term plan and schemes for implementation in 2007, which should allow for the continued development of curricular PA.

- **Co-curricular physical activity**

The school had offered additional opportunities for students to engage in physical activity, such as: Kelly Sports, the Push Play challenge, and a Push Play day.

- **School organisation and ethos**

The school's BOT had committed to an increased budget in 2007 that better reflects the school's improved knowledge and understanding of its new PE programme, and the requirement for increased spending on resources and equipment.

The Principal had recognised the importance of sustaining the development of PA into the future by allocating it an extra management unit, in 2007.

- Links with parents and the community

School, parent and community links had been enhanced through the parent evening, newsletters that were sent home that detailed physical activity developments, and a series of newspaper articles that profiled the schools commitment to developing a strong physical activity culture. In support of PA, fundraising money had been used to purchase further PA equipment, and parents had worked to re-establish the walking school bus.

While development of the PA culture had taken place during 2006, less than 50% of parents indicated that they felt the school had been good, or excellent at encouraging students to be physically active. The results of the parent questionnaire would suggest that parents were happy with the PE opportunities (97%), and playground equipment (97%) that were available to their children. However, fewer parents felt that after-school sporting opportunities (57%) or in class sport time (46%) was provided, which would suggest that Otter School could continue to develop their co-curricular programme, and links with parents.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

The school identified a range of factors they were committed to, that allowed them to ensure that students had positive experiences, and a range of opportunities to engage in PA, including:

- Teachers that value PA, both for themselves and their students;
- Support from the BOT and community, in terms of funding, for PA equipment;
- A Principal who embraces a culture of change;
- A commitment to teacher PD development, that enabled teachers to attend PA sessions, both curricular and co-curricular;
- Parents who value PA, both for themselves and their children, and provide extra curricular opportunities for their children themselves;
- A willingness to work with community agencies; and
- Having senior students at the school who willingly run activities, in support of other students' efforts to be physically active.

CHANGE PROCESSES AND FUTURE STRATEGIES

It seemed that Otter School had a staff culture based on encouragement and support, and this had helped them in the change process. The support of both the lead teacher and the Principal, and their openness and willingness to try new things enabled the teachers to feel supported. This encouraged them to trial different aspects of the PD. An essential element in the success experienced at Otter School was the ability of the SSS and the RST to work in unison. These two groups helped the school to explore and then develop its physical activity culture. Future work with the RST in 2007 will assist further development. To support further development of the PA culture at Otter School, the Principal and the teachers, the Principal indicated that there was a need to:

- Develop and implement the PE overview;
- Ensure there is a teacher with responsibility for PE; to lead the development of the programme, and to support classroom teachers;
- Seek ongoing support from the BOT;
- Access ongoing support, particularly from SSS, to continue to support the development of their curriculum programme
- Continually upgrade PA equipment and purchase a wider variety of resources; and
- Continue the relationship with the RST so they can provide opportunities for students, and information and ideas for teachers.

OTTER SCHOOL: KEY POINTS ARISING FROM THE CASE STUDY

1. Involvement by both SSS and the RST working in unison, provided Otter with the opportunity to explore their PA culture, as opposed to just focusing on curricular PA;
2. Previous experience with, and an understanding of the AFL principles provide a good based for transferring this knowledge into PE lessons. However PE curriculum and content knowledge was needed to further develop the delivery of curricular PA as providing model unit plans was useful, but appeared to create teacher dependence on external providers, as opposed to independence;

3. Principal, BOT and lead teacher support were vital to the change process;
and
4. Ongoing PD would assist in sustaining change, with a note of caution about creating dependence.

CHAPTER FIVE: CASE STUDY ANALYSIS

This case study analysis highlights the interplaying systemic issues, at government, PD provider, and local context levels that have influenced the Physical Activity Initiative Model 2 PD. Having outlined the wider systemic issues, this synthesis details the impacts of the initiative on teachers, students, and the wider school community across the ten case studies, before concluding with a brief summary of the main findings.

SYSTEMIC ISSUES

Government initiatives, such as the PAI, are not self-sufficient entities. PD provider, school and teacher 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 Physical Activity Initiative, is variously interpreted and distributed, both at regional level (advisory services) and in each local context (schools) before it impacts on individual teachers. 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, p. 117). The following sections highlight how the varied interpretation and distribution of policy, impacts on the professional learning opportunities that teachers in school receive.

INTERPRETATION OF MODEL 2

Evidence from the case study schools, and discussions with PD providers, highlights that interpretations of the whole-school action reflection model and the expected involvement of the RST’s local contexts was varied.

RST INVOLVEMENT

As part of Model 2, schools were to be offered a comprehensive support package involving:

- Educational personal from RST who would focus on supporting and fostering co-curricular pa, outside the class programme time, within both the school and the school community; and
- SSS PE advisers focusing on curricular PA based on the HPE curriculum.

SSS had specific outputs that they were expected to achieve in relation to Model 2 schools. In contrast, RST educational personal, at the time of the evaluative research, had no direct requirements placed on them by SPARC. In essence, RST act as separate entities with no explicit contractual agreements with SPARC, which appears to have influenced RST's level on input to Model 2 schools.

The four RST's involved in the case study schools, operated in Model 2 in a variety of ways. One RST had understood that they were not to work in Model 2 schools at all. Two other RST's had discussed their involvement with the SSS and decided to support SSS Advisers during workshops but not work in schools intensively. These two RST's understood that they had two years to work with Model 2 schools, while SSS were only contracted to schools for one year, and therefore the decision was made that SSS would take the lead role in 2006, and RST's would explore co-curricular PA in these same schools during 2007. The final RST involved in the case study schools had also decided to work more intensively in their local schools during 2007, but had been involved with one case study school extensively at the request of the school.

The MoE, SPARC alliance and vision for RST's and SSS potentially working collaboratively and in-depth in schools does not appear to have been realised. Across case studies schools, nine out of ten did not have direct involvement with RST's as part of their involvement in Model 2, however some schools received some PD from RST's through other projects/initiatives. The only other PD contact schools appeared to have with the staff from RST, had been when a representative from each of the case study schools attended a half day PD session linked to the *Active Schools* toolkit, and Bush School, who had a staff meeting run by the RST education personal, no further support for the toolkit was provided.

The limited involvement of the RST appears to have resulted in very little impact on the presentation of co-curricular PA in the case study schools, as this not the focus of the PD teachers/schools received during 2006. With the exception of one school, Otter, there was a view that this was a PE initiative. Of these nine schools that saw the

initiative as relating primarily to PE only two, e.g. Meteorite and Plains, saw some impacts on students co-curricular attitudes and participation, but noted that these had in affect been a result of the focus of learning in PE.

The lack of RST involvement in Model 2 schools has made it difficult for the evaluative research project to comment on RST's impacts on co-curricular PA, and the case study schools PA culture. Further research is needed to explore evidence of how RST's affect co-curricular PA.

THE WHOLE-SCHOOL ACTION REFLECTION MODEL

Model 2 offers 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) Sharpening the Focus, Issue 10

The PAI is a policy initiative involving the Ministries of Health and Education, and SPARC working collaboratively as part of their tripartite agreement. Model 2 was designed for schools that needed whole-school focussed support, and was directed at building teacher capability.

While directives from the MoE suggested that a whole-school action reflection model be used for the PD in Model 2 schools, it would appear that there has been some confusion about what this means both at PD provider level and within school settings. While there was a consistent understanding of the action-reflection process, there were two dominant interpretations of what a whole school would focus on. Whole-school has been interpreted as either PD that explores curriculum learning and teaching, school organisation and ethos, community links and partnerships, which aligns with the MoE's approach to develop a PA culture. Alternatively, whole-school can mean PD focusing on whole school involvement, where all teachers, and senior management, are professional developed in a particular area, such as PE. This alternative interpretation, demonstrates the manner in which principals and teachers appear to have understood whole-school.

While teachers and principals expected that the whole school would be involved extensively in the PD (more in line with their previous experiences of the numeracy contract), the evidence demonstrates that advisers' interpretations of whole-school involvement varied, and appear dictated by limitations within their contracts and time allocated to each school. Some SSS Advisers endeavoured to work comprehensively

with the entire staff of each school, through both staff meetings and lesson observations, e.g. Airport, Steephill, and Otter. However, in other instances advisers worked almost exclusively with lead teachers or small groups of teachers, with the expectation of running a range of staff meetings, e.g. Mud River, Stadium and Plains. However, a common feature of interactions between advisers and schools, was the use of lead teachers. In all ten case studies, lead teachers were identified to work extensively with advisers, both through cluster meetings and during in-school professional development sessions. The involvement, and identification of lead teachers, appears to have resulted in schools and advisers suggesting that a lead teacher, as opposed to a whole school approach was used for the delivery of Model 2. It would appear that a clearer explanation, and communication of what a whole-school model means is needed to allow both PD providers and schools to understand what the content and delivery of the PD might entail.

Additionally, Model 2 was to be undertaken using an action reflection model. The Ministry of Education (2005b) provided SSS advisers with an outline of the aims, outcomes, indicators that were to be addressed, using an action reflection model, in the PAI, Model 2. This action reflection model, as described by the Ministry of Education (2005b) had four aims and eight outcomes, some of these relate to the teaching and learning of physical education, while most focused on developing the components that contribute to a physically active culture in a school.

Regional coordinators appeared to understand that they, and other advisers, were to use Smyth's (1989) action reflection model to achieve these four aims. That is, coordinators recognised that they were to work through the following stages of Describe, Inform (Analysis), Confront (Self awareness), and Reconstruct (Evaluation and Synthesis), as they, and other advisers, worked with teachers in schools. However, it was not apparent that teachers were aware that they were using an action reflection model, throughout the professional learning opportunities they received. This is not to say that the action reflection model was not used, although interviews with advisers indicated that there were challenges in using this model within the one-year timeframe.

PROFESSIONAL DEVELOPMENT: PROVIDERS AND DELIVERY

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 SSS's operate, and the knowledge and experiences of the advisers, appear to have had implications on the delivery, content development and selection of facilitation model that SSS Advisers have used within Model 2. The limited involvement of the RST, has meant that it was not been possible from the evidence to explore the operational factors within these organisations that may or may not impact on the PD that teacher's in school receive. Therefore, this section of the synthesis relates more directly to SSS.

SSS operations

It would appear that contractual obligations, between the MoE and SSS, the realities of delivering PD in line with a particular theoretical approach, and the knowledge base, experience and training of advisers had implications for the way in which schools in Model 2 received PD.

CONTRACTUAL OBLIGATIONS

This [Model 2] is designed for schools who wish to become an Active School. 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. A focus on teaching and learning within physical education will be paramount, in order to lay the foundation towards becoming an Active School (PD Guidelines, provided to each SSS regional co-ordinator by the MoE PAI Project Manager, 2005)

The detail above, provided to SSS Advisers, would indicate that the PD would focus on HPE programmes, and teaching/learning in PE. SSS Advisers were to spend up to eight days working in schools to achieve a range of outcomes (Output 11). In order to address these outputs while working in schools during 2006, it would appear that SSS Advisers were forced to be highly selective about: the PD programmes content, and interactions advisers had with schools and teaching staff.

Therefore, the three regions investigated in the evaluative research SSS opted for a lead teacher, cluster-meeting approach to delivering the PD. In addition to working with lead teachers during cluster meetings, advisers also worked with teachers in the school context, to better meet the schools individual needs. In being selective about

what content was realistic to address within the one year time frame, it would appear that advisers worked with a more prescribed programme, as opposed to an individualised programme that meet individual school needs, and accounted for local variation.

Advisers commented they did the best they could within the timeframe, and context of a one-year model, yet admitted to feeling like they are withdrawing support from schools before schools have made enough process to be able to sustain the changes without SSS guidance and support.

DIFFERING ADVISOR KNOWLEDGE BASE, EXPERIENCE AND TRAINING

As the 'perceived experts' working with teachers in schools, the SSS Advisers are pivotal to the success of the PD. It would appear that, with the exception of regional co-ordinators, most advisers working in Model 2 were appointed from positions as generalist teachers in local primary schools. According to comments made by SSS Advisers, there had been little time between appointments to the positions of adviser and beginning work in schools. The transition from roles as generalist teachers to SSS Advisers in the health and physical education curriculum area, appears to have created particular challenges and tensions for new advisers, including having opportunities to develop an understanding of professional development models and theories. New advisers made comments that they 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.

For example, in using TGfU, as the dominant curriculum model in the PD, advisers were provided with an approach to demonstrate pedagogical content knowledge, where content knowledge associated with PE is transformed so that it becomes pedagogically powerful. It would appear that in developing the content for the PD programme the new advisers learnt a battery of games, from their regional co-ordinators, which they then used to model quality teaching, and the TGfU approach in schools. It was apparent that across all three regions SSS Advisers modelled the same or similar games, including chuck the chicken, rob the nest, triangle tag, stuck in the mud/stiff candles, and dribblers and robbers. These games have then been replicated by teachers in all the case study schools, with only one teacher indicating that they had found and developed alternative games. It would appear that the SSS

Advisers, with the exception of regional co-ordinators, have an extensive understanding of general pedagogical knowledge, however few appear to have a deeper understanding of PE subject content knowledge and therefore have difficulty with pedagogical content knowledge. This limits the potential for advisers to encourage teachers to critical reflect and enhance their practice.

THEORY AND PRACTICE

SSS Advisers were to develop Model 2 in line with Smyth's (1989) action reflection model and Kugel's (1993) stage development model for PD. However, the data indicates that advisers were unclear on how these models might be implemented within constraints of a one-year model. It would appear that advisers need greater support to develop a shared understanding of professional development models and theory.

CONTENT DEVELOPMENT

To support SSS Advisers in developing PD programmes there was a consensus amongst advisers as to the foci for PD delivery that could be delivered in a manner that best suited the teachers in each school. To support the development of a PD programme specific to each school there was an expectation that each SSS Adviser would use information gather by surveying the teachers from each school to assess then needs of the school and develop a programme of PD that catered best to each individual school context.

As evidenced in the work plans of SSS Advisers, and in minutes from the SSS regional co-ordinators meetings the consensus was to focus on quality teaching, student centred approaches, and curriculum understanding and pedagogy in physical education. Across all ten case studies, it was evident from teachers' comments that the focus of the PD had been on:

- Quality teaching – particularly learning intentions, grouping and questioning;
- Student centred approaches, particular TGfU or some form of this such as a games approach;
- Other approaches to physical education such as those demonstrated in the *Moving in Context series*, and to a lesser extent *ABL*; and for lead teachers
- Long term planning for PE programmes.

What was less evident, from the teacher interviews, lesson observations and teacher questionnaires, was how HPENZC and the unit/lesson planning process, or the concept of a physical activity culture, had been explored within the PD.

The focus on quality teaching had a significant impact across the broadest range of teachers, and learning in this area was not reserved specifically to lead teachers. The quality teaching PD focussed on areas such as: questioning, small 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 environments. For some teachers (over 50% of those interviewed), having a focus on general pedagogical content knowledge as part of their PD, made them realise that PE is the equivalent of any other curriculum area. Therefore, encouraging teachers to transfer the qualities of good teaching they used in other curriculum areas, for example, math and language, into their teaching of PE. The evidence from this would suggest that teachers did not gain the appropriate PE specific subject knowledge or pedagogical content knowledge to be able to develop programmes further.

DELIVERY

Each case study school had a maximum of eight days support from SSS Advisers spread across 2006. All case studies schools were delivered PD through: lead teachers attending cluster workshops, staff meeting, the modelling of lessons/activities, the distribution of lesson/unit plans, and the observation of lessons. Variation in: school size, school organisational structures, teachers experience/attitudes/willingness to change, other PD commitments, the position of lead teacher, numbers of lead teachers and their distribution around the school appear to have impacted on how the school and/or adviser determined how the PD model would be delivered in each school. Outlined below is a cross-case analysis of each delivery method employed as part of the case studies schools PD programme.

Lesson Plans

SSS Advisers provided teachers with example lesson and unit plans to help inform the learning. The plans allowed teachers to trial a range of new approaches and contexts in PE, including TGfU and a thematic approach to movement using the *Moving in Context series* as a resource. Teachers' reported using example plans included units

focussed on, TGfU (either invasion games or tag games), or an aspect of the *Moving in Context* series (balance/statics, rotation, or pathways). The plans contained detailed instructions for; the sequence/structure of the unit/lessons, specific learning intentions linked to HPENZC achievement objectives, activities; assessment; and in some instances the questions that would need to be asked to developing the learning.

Evidence suggests that these plans have been used extensively in every school by both lead and non-lead teachers. Teachers commented that they felt comfortable delivering these lessons/units, especially when they had been shown/participated in the activities that made up the units during staff meetings and/or cluster workshops. Having been involved in the activities previously gave them the specific pedagogical content knowledge of how to run the practical activities, and general pedagogical knowledge of what sort of questions/direction they would need to give the students and what the learning intentions might be. These unit/lesson plans allowed teachers to move their practices beyond purely sport and motor skill development, to focus on broader educational goals such as teamwork, cooperation, strategic thinking and problem solving in game situations.

However, it would appear that teachers have become reliant on these lesson/unit plans to guide their teaching. Teachers (53%, in questionnaire two) expressed the desire to be provided with more unit plans, activities and ideas they could use in their class. Many teachers (95%) seem not to have experienced planning for learning in PE. It would appear that only lead teachers were exposed to unit planning, and only four lead teachers (22%) indicated that they had planned a unit of work for PE based on what they had learnt from the PD, during 2006. Providing unit/lesson plan examples does not necessarily challenged teachers to understand links between planning, HPENZC and student needs, and therefore limits teachers potential to develop a learning programme that is congruent with their own students needs. There appeared to be a pattern of reliance, forming amongst teachers, on SSS providing them with their PE plans. The length of time available for the PD, appears to constrain the PD providers from moving teachers from dependence to independence.

Modelling of lessons and activities

All teachers reported that seeing the model lessons had helped them develop a better understanding of teaching PE, particularly when the model lessons were drawn from the exemplar lesson/unit plans that SSS Advisers provided. With the exception of

Stadium, the advisers delivered model lessons. In most instances, the model lessons were delivered only to lead teacher's classes, but other teachers had the opportunity to observe these lessons, and were released from their class to do so. At Steephill and Meteorite, all teachers had model lessons taken by the adviser using the teacher's class. Model lessons appear to have allowed teachers to feel more confident with their delivery of understanding of the content and structure of PE lessons.

In line with this, teachers, across all sites, reported finding involvement in the activities at staff meetings (and cluster workshops for those who had access) very enjoyable and valuable as away for them to learn the 'games' themselves. This enabled them to take them straight back and use them with their class. The model lessons and the teachers own involvement in activities/games appears to have given teachers' some understanding of physical activity specific content knowledge and the pedagogical approaches that can be used to teach PE. While this appears to have assisted teachers to feel confident delivering a wider range of games/activities, the evidence indicates that teachers did not feel as confident developing their own material and had not made moves to do this, therefore relying on the material demonstrated by the SSS Adviser. With adviser support being withdrawn in 2007, there are concerns that teachers may struggle to develop new content, and particularly games further or in a manner that makes them more suitable for their students, or have an understanding of TGfU or knowledge of games to create or come up with other games for different learning purposes.

Observation and feedback

Teachers' who had the opportunity to be observed teaching and received feedback from the SSS Advisers, found this process beneficial. Observation of lessons occurred to different degrees in different settings. Each school had up to eight days support from the adviser, how this was used varied, and this is evident in the number/amount of observations that occurred and how much feedback was received.

In the larger schools there was a wide range of variety in the practice of observing teachers. At Airport School all teachers were observed at least once, for a short time, while at Stadium only four teachers observed, and these happened to be only the ones that were interviewed as part of the evaluative research. Each teacher at Airport received some feedback from the SSS Adviser, while the teachers at Stadium received little feedback, including Wendy who received none. At Mud River, the lead

teachers had two model lessons each to draw on in developing their ideas of teaching PE, and then were observed twice. In one region the lead teachers, in two of the three schools, had lessons observed and videoed by the SSS Adviser.

Many teachers had felt anxious about being observed but valued the opportunity to get feedback on their teaching. Teachers who had lessons observed, with the exception of Wendy, commented on how positive the feedback process had been. The evidence provided by teachers, including copies of the feedback forms, indicated that most of the feedback teachers received related to general pedagogical knowledge and strategies, specifically the use of learning intentions, questioning, and student practice and reflection. There was no comment about the use of subject specific curricular, content or pedagogical knowledge. The feedback received from the adviser could have related to any curriculum area, and not specifically curriculum PA.

It would appear that across all sites teachers were specifically challenged, by the feedback process, to think about the general teaching practices within their lessons, but do not appear to have been engaged in extensive discussion about their subject and pedagogical content knowledge, and appropriateness of the activities they choose to deliver.

LEAD TEACHER APPROACH

The lead teacher approach, used in all ten schools, raises some concerns for the sustainability of change that has been evident in schools. The diverse range of issues raised by lead teachers, and principals highlighted four problems with the lead teacher approach as a realistic model for whole-school PD and the sustainability of change.

The four problems were the:

- Disparity between the level of professional learning for lead teachers in comparison to other teaching staff;
- Time lead teachers had to understand and trial new approaches before being expected to support other teachers;
- Difficulty lead teachers had in sharing information and new knowledge with other staff. There was also an expectation from the principals of the case study schools, that the lead teachers would drive the PD and support the other teachers in the school during the PD. However, this was difficult in some schools, for example, Airport and Mud River, when staff numbers were high

and lead teachers had to work with large numbers of staff, or at Steephill where the lead teacher was a junior staff member, and felt that she had limited authority or status to bring about change; and

- Sustainability of change. The principals of three schools expressed concerns the possibility, and reality, of the lead teacher leaving the school, and the impact this would have on the sustainability of the progress that had been made in 2006.

SCHOOLS

Across the ten case study sites, there were processes that supported and others that constrained the change process. Each local context had its own range of factors that enabled and constrained the development of PA, however issues with: over commitment; differing teacher knowledge base, experience and motivation to change, 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

A significant factor on professional learning was schools' commitment to other initiatives, both/either internal or external. Eight of the ten schools had other commitments that placed constraints on teachers' time and motivation. In some cases, external initiatives were demanding of teacher time and focus, e.g. Westfield's involvement in the Reading Innovations contract and the Wellbeing in Schools project; Waterfall's focus on the use of eTAP as a planning tool and on-going involvement in the Numeracy contract; and Otter was still involved in an ICT contract.

Other schools had internal pressures, and/or competing agendas that appear to have created tensions for staff. For example: Mud River had a new Principal that was trying to embed an inquiry learning approach into the general pedagogical knowledge of teachers, while also changing school policy. At Steephill the Principal was promoting fitness, which appears to have become a dominant focus for many teachers, and Bush had ERO coming at the end of term four, so were focussed on preparing for this.

Interviews with principals highlighted their concerns with the ongoing expectation that schools are involved in external PD. Some principals thought that pressures, placed on them by the MoE, did not allow teachers time to develop and understanding and

confidence in the areas of PD they undertook, as the next year they moved on to a new area and the learning from the previous year was pushed to the side.

Differing teacher knowledge base and motivation to change

Undertaking to deliver PD to a whole school means that advisers have to cater for the individualised learning needs of each teacher, within the broader framework of addressing all teachers' needs. This creates the expectation that advisers would apply the general pedagogical knowledge that stimulates a positive learning environment in the classroom, into their planning and practices for delivering PD in the staffrooms of school, individual teachers classrooms and in offsite PD workshops. However, this is a challenging task given the perceptions teachers have of themselves as deliverers of PA, curricular and co-curricular, the limited opportunities teachers have had to broaden their knowledge about teaching PA in school setting, and teachers own perception of the need for change in their own or the school delivery of PA.

Prior to the PD, the seventy five teachers who responded to questionnaire one, identified themselves as expert (8%), intermediate (73%), and beginners (19%) when delivering co-curricular PA, however when responding to a question about their perceived ability delivering PE, the number who perceived themselves to be beginners increased to 27%, while the expert number dropped to 5%.

McGee (1997) identifies important characteristics necessary for successful change, including teachers' willingness to enhance and refine their teaching, a belief that change is important so they want to develop more expertise, openness to new ideas, willingness to share ideas with colleagues and preparedness to take risks. Teachers need to see their teaching as problematic and to take responsibility for changing their practices (Jones & Moreland, 2005).

Teachers' perceptions of themselves can influence their willingness to change. The teachers interviewed (n=27) demonstrated differing degrees of willingness to change and enhance their teaching. There were teachers that demonstrated less inclination to change their practices, for example, Culhane (Steephill) was comfortable with what she was teaching, and happier to get someone else to deliver curricular PA to her class, than having to change her practice as she neared retirement. Walter (Mud River), and Haley (Waterfall), already felt confident about their ability to teach PE and therefore appear to be less open to new ideas. In contrast teachers like, Mildred (Westfield) and Gina (Stadium), who felt less confident and competent teaching PE,

and identified as beginners, before the PD were open to improving her teaching and therefore made significant shifts in both her ability and confidence.

Also of interest is the limited amount of PD teachers had received both pre and in-service. Evidence from questionnaire one indicates that the amount of time spent learning about curricular PA during initial teacher education (ITE) appears to have decreased over the past ten years. Over 50 percent of teachers with less than five years teaching experience reported having less than 40 hours of training on how to teach PE in the primary school, while only more than 70 percent of those who had between five and ten years teaching experience had over 40 hours, with 43 percent having over 75 hours. A decline in the amount of time dedicated to training teachers to deliver PA, and more particularly PE, in the ITE programmes nationally, is likely to have an impact on the knowledge, understandings, skills and confidence beginning teachers have about delivering PA. In addition, teachers' experience as part of their ITE will influence their understanding and ability to deliver PA in the primary school setting. For example Gina (Stadium), Maria (Bush), Haley (Waterfall) and Sam (Steephill) all had attended different ITE programmes and come away with diverse understandings of what PE in the school setting entailed. Ranging from developing students to play in different sporting codes, to PE based on HPENZC, or in Gina's recollections from ITE, PE as linked to HPENZC, but experienced as running around the field and doing lots of games.

As is evident from the examples above, teachers as learners have different levels of understanding, experience, confidence and willingness to change as they enter PD and engage in professional learning. The evidence to date would suggest that in working with teachers as learners, it is important for advisers to develop and deliver PD that caters to the needs of all groups.

Processes and leadership

School wide processes, leadership structures appear to impact on the PD process and therefore teachers' professional learning. The case studies highlight that:

- Where principals are themselves engaged in the PD, they are better placed to support both lead teachers and wider staff needs, e.g. Plains and Otter;
- When PA, and more particularly PE, was given status by the principal within the school, 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;

- Organisational systems that allowed lead teachers time to process and trial new approaches, and provide PD support for other teachers, appeared to be more effective;
- Support of the lead teacher, in terms of time, and opportunities to share with other staff, was essential to teachers' making progress. Those lead teachers that were not supported appear to have resorted to making changes to their own practice, as opposed to endeavouring to work to make change across the school.

IMPACTS OF PHYSICAL ACTIVITY INITIATIVE ON TEACHERS

It would appear that systemic issues may have been influential on the outcomes of Model 2. Each organisational level, government level, PD providers, schools, and individual classroom teachers, works within parameters, where these areas intersect issues arise that need to be addressed in order for policy and practice to be coherent. Notwithstanding these issues, there have been impacts from the Model 2 PD for teachers, students and the wider school community. These are detailed below.

CONCEPTUAL CHANGE

Teachers' continued to be confused about the relationship between PA and PE. This is evident both in their definitions of the concepts and in their understanding of what constitutes PE. Across teachers, who completed the second questionnaire (n=57), there was a common understanding of what PA was. For the majority of these teachers, PA was any opportunity to be physically active. This included opportunities at break times, before and after school and was perceived to be less structured. This understanding of PA did not reflect a conceptual shift from the teachers' definitions outlined in the first questionnaire.

In contrast, there was variety in the way teachers defined PE. The only consensus between teachers was that PE involved teaching and was more structured. Sarah and Kylie (Meteorite) evidenced the lead teachers experienced more of a conceptual shift in their thinking about PE. Sarah had moved from seeing PE as only about skill

teaching, following the PD she had come to see the importance role PE could play in the development of social skills. Across all lead teachers there was a shift in understanding PE from being about more than motor skills development and sports, to understanding the use of PE to explore strategy development, problem solving/decision-making, and teamwork. Some teachers, those who had not been exposed to the cluster meetings, also demonstrated an increased understanding of broader educational aims of PE. However over 60% of this group still saw PE as being predominantly focussed on the teaching of physical skills, after the PD. Evidence would suggest that teachers, using the example plans provided by SSS, are now exploring both learning in and through movement. For example, Sarah (Steephill) had Year 1 students looking at 'working together' in tag games, and Mildred's (Westfield) students were learning not to fight when playing games, a form of conflict resolution, acceptance of others and "socialising skills". However there was little evidence from any data source that schools were exploring learning about movement or working extensively within Strand D.

There was ongoing confusion about what constituted PE within the broader school curriculum. Schools appeared to continue to offer, or increased the amount of, fitness and syndicate sport as part of the school curriculum, which is in addition to PE lessons. However, when fitness and syndicate sport are offered as replacement for quality PE the school curriculum needs to be further explored as to the wider implications of this.

CURRICULAR PHYSICAL ACTIVITY

KNOWLEDGE, SKILLS AND UNDERSTANDING

The focus of the PD provided by SSS produced a range of impacts in the way curricular PA was delivered. In particular, the emphasis placed on applying general pedagogical knowledge or as teachers referred to it, 'quality teaching', in the PE lesson, appears to have been the most considerable impact of the PD. To a lesser extent, subject specific pedagogical content knowledge has been addressed, and had an influence on the teaching of PE. However, there appears to have been less impact on teachers PE curriculum and content knowledge, as an outcome of the PD. The following sections provide more detail to demonstrate the changes that have occurred in teachers' knowledge, understandings and skills in teaching curricular PA.

General pedagogical knowledge

Teacher in all ten case studies noted that they had changed the way they structured their PE lessons. It was apparent in the case studies that teachers had worked to transfer general pedagogies used in other curriculum areas into their physical education lessons. Of note were teachers' comments about using the knowledge they had gained from *Assess to learn* (AToL) or *Assessment for learning* (AFL) contracts, in their PE lessons. Specifically teachers appear to have developed an understanding of:

a. Share learning intentions with their classes

The emphasis placed on general pedagogical knowledge within the PD has been embedding in teachers practice of sharing learning intentions, developing success criteria and engaging students in reflection on learning within PE lessons. While teachers indicated that they were already using this approach within other learning areas, they had not transferred this knowledge to teaching PE. Teachers across all case studies reported that the incorporation of these pedagogies was a major change to the way they structured their PE lessons.

The introduction of learning books/journals, or thinking books was another example of change within the way learning was structures within PE lessons. Teachers reported that the learning books provided both teachers and students to reflect on learning and in some instances, Kylie (Meteorite) and Hannah (Plains), learning books gave teachers direction for future learning.

It would appear that teachers have developed a sound understanding of the need to share learning intentions and incorporate general pedagogical knowledge into PE classes, however it is difficult to determine from the evidence if teachers have the curricular, subject content and pedagogical content knowledge to develop programmes of learning appropriate and relevant to their class.

b. Using questioning to elicit student discussion

It was apparent that teachers in all ten schools have developed an understanding of the important role questioning can play in learning in PE. The dual focus on questioning within the PD on quality teaching and the TGfU approach appears to have assisted in embedding questioning into the

teachers general pedagogical practices in the PE setting. Teachers valued the use of questioning to enhance learning as they felt that it placed more ownership on to the students, and made the lessons less teacher directed. According to teachers students appeared to feel more listened to, and had become more respectful of others ideas.

For some teachers, Briar (Otter) and Harriet (Plains), the use of questioning in other learning areas helped support them as they developed the technique in PE lessons. In contrast Corrine (Airport), a less experienced teacher, had developed her questioning technique with support from the SSS Adviser as part of the PAI, and had transferred this learning to all other learning areas

Notwithstanding the evidence that demonstrates teachers developing an understanding of the importance of questioning as part of the learning process, there is uncertainty as to the ability of some teachers to develop and ask appropriate and open questions. While model lessons run by advisers and resources such as the *Moving in Context* Series, provided examples of appropriate questions, observations would indicate that some teachers do not have enough subject content knowledge to develop the questioning sequence. For example, Anthea (Otter) illustrated the use of questioning in the lesson observation, however many of her questions were closed, “who can” or she did not give students long to come up with answers, and so answered the questions herself. Without knowledge of the content area, then it appears difficult for the teachers to determine appropriate questions that will assist the students to process the information.

Even with content knowledge, it would appear that for some teachers developing the ability to question will take time as they relinquish the pattern of using a teacher directed approach. For example, Walter (Mud River) and Petra (Bush) described how they had previously not questioned students in the manner encouraged by the SSS Adviser, as they were more accustomed to telling students what to do.

Across all schools, the use of questioning has resulted in a major shift to the way teachers deliver PE lessons. However, the evidence would suggest that teachers will need on going support, both in how to question, and what are appropriate questions, if questioning is going to enhance student learning.

c. Ability grouping students for activities

Teachers commented that they had used ability grouping previously in Math and Reading, but had not previously felt comfortable doing this in PE contexts. From the first staff meeting in most schools most teachers had experienced being group according to their level of ability, using self-assessment to determine this level. Teachers had found this positive and allowed them to recognise that grouping students, allowed them to better meet student needs and additionally assisted in alleviating some of the social issues that happened in their PE lesson.

For example, Hannah (Plains), Gina and Gordon (Stadium) reported that the grouping of students had created a more positive and inclusive learning environment in PE. Teachers were of the opinion that ability grouping allowed the more able and often more competitive students the opportunity to extend themselves, while those who were less confident participating in PA settings had more opportunity to participate and develop skills within a safe environment.

Corrine and Claire (Airport), had also valued the PD on grouping students, and using smaller groups to increase student participation. They reported having used this strategy in class, however noted that in some activities such as high jump, where they had limited equipment it was not possible to group students. Teachers also appeared to have difficulty transferring the idea of ability grouping into curricular PA opportunities such as syndicate sports, or when there was two classes, or more, working together.

It would appear that while teachers understood the concept of ability grouping, some did not have the confidence or knowledge of content to transfer this pedagogical strategy across a range of PA contexts.

The adoption of these general pedagogical strategies had changed the structure of teachers' PE lessons. While different teachers across the ten case studies had utilised these strategies to different degrees, they recognised that they had changed the way they taught PE. It would appear that for most teachers their lesson structure has changed from one of warm-up, skill practice, game, warm-down, to lessons that now also involve the sharing of learning intentions, stopping during lesson for discussion, and a reflection period at the end. Teachers commented that these changes had:

- Given the students more ownership of the lesson;
- Helped students understand what they were learning about;
- Better meet the needs of all students;
- Made the lessons less teacher directed; and importantly appeared to
- Generate more positive attitudes, and higher levels of participation amongst students.

Pedagogical content knowledge

Teachers with developed pedagogical content knowledge, have the skills to transform PE content into learning activities that are pedagogically powerful. TGfU as curriculum model appears to have been chosen and delivered by SSS as a medium that would allow teachers to explore student centred approaches within the teaching of PE, and develop pedagogical content knowledge. The TGfU approach provides a pedagogical model for the development of games understanding and skill, within PE lessons. There appears to have been some variation in the way each region presented TGfU, with one talking instead of a games approach, and differing levels of emphasis, being placed on the importance of such an approach. It was apparent in the case study schools that TGfU (or some version of it) had become embedded within the PE programmes and teaching practices, albeit with varying degrees of understanding.

Across all sites, 100 percent of teachers interviewed commented on using games in their teaching of PE. During staff meetings, model lessons and at cluster meetings teachers were 'bombarded' with games they could use in the classroom to explore concepts like strategy development and cooperation. Teachers across all year levels used the example tag or invasion games units with their students. For example,

- Harriet (Plains), used tag games to form the basis of a unit focussed the picking partners with her NE/Yr1 students;
- Sam (Steephill) used tag games to explore strategy and keeping each other safe with her Yr 1-3 class; and
- Ruby (Mud River) used invasion games to help her Yr 6 students understand using space and being cooperative will playing sports such as netball and rugby.

It would appear that the use of the TGfU approach, supported by a range of example units and resources provided by advisers, has allowed teachers to identify other learning focuses in PE, other than the teaching of movement skills. This has transformed the focus of some teachers' lessons, from movement skill teaching to the development of cooperation, problem solving and strategic thinking, all within game settings. In addition, 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, Petra (Waterfall) had seen her 'intellectual' student more engaged, as he had been able to contribute ideas to make games better, while teachers at Meteorite had seen the use of games have a positive effect on the interpersonal relationships between students.

While many teachers seem to have successfully experimented with TGfU, there appeared to be variation in their:

- Level of understanding the philosophy/ intent of this approach

For some teachers, such as Maria (Bush School), and Anthea (Otter), the use of games was not linked to the development of games sense, but was simply about having new games that could be play with there class to help them develop movement skills. It was evident that for some teachers student learning was focused on learning the new games, but not on the development of strategy or teamwork, or any other learning outcome one might expect from the TGfU approach.

- Ability to develop the approach beyond what they were modelled

Across all schools, it would appear that teachers relied heavily on the games demonstrated by advisers, and in some instances RST personal, as teachers talked only of the bank of games they had learnt in the staff meeting and cluster workshops. Student interviews confirmed this, as students outlined their learning, and the games they had been taught, for example, dribblers and robbers, chuck the chicken etc. It would appear that teachers have not developed their own games/activities to use with their classes. The only exception to this appeared to be Sarah (Meteorite) who had accessed a website dedicated to TGfU, that provided her and her colleagues with an extensive array of games, for specific learning intentions.

In addition, teachers appear to have relied on the lesson/unit plans for invasion and tag games to direct their practice. With few exceptions, teachers have not moved beyond the example plans, to planning of their own units using the games approach.

In order for TGfU to be effective, it requires that teachers (and advisers) understand game development, and can adapt or construct games and questioning sequences that actually allow for the explicit focus of the learning. Evidence gathered from the case study schools would suggest that teachers have not yet had the opportunity to develop content knowledge that would allow them to move beyond the model lessons and activities they were provided, to demonstrate their own ability to plan using the TGfU approach.

- Understanding of the role TGfU can play within a school PE curriculum

While the move to incorporate TGfU into the repertoire of PE teaching has extended teachers' understanding of what learning can occur within a PE programme, and offered an alternative way to deliver PE, TGfU is only one of a range of curriculum models that can be used within a PE settings. It would appear from the discussions with lead teachers about their long-term plans/overviews that the TGfU approach will be a dominate feature within the future school PE programme, e.g. Plains and Bush. This raises the concern that TGfU becomes what constitutes PE, and this does approach does not allow teachers to address all aspects of the HPENZC.

Physical education curriculum and content knowledge

A one-year PD programme that focuses on general pedagogical knowledge at the expense of PA pedagogical content knowledge restricts the learning for teachers and hence the opportunities for students in schools. This approach limits teacher's opportunity to develop content and curriculum knowledge base.

COMPETENCE AND CONFIDENCE

Using the lesson/unit plans provided by the advisers, and drawing on the activities modelled by advisers in staff meetings and model lessons supported teachers to, identify appropriate learning intentions and activities in their PE lessons, and feel confident delivering PE content. Case studies showed that teachers felt more confident when they were given strategies and activities for use with their students.

Across the case studies there is little evidence suggesting teachers have planned their own lessons/unit, without supporting material from the SSS Advisers. It is therefore difficult to determine if teachers will be able to develop appropriate learning intentions, and identify suitable learning activities/tasks that addressed student needs and allowed students to explicitly work toward the learning intentions, when external support is withdrawn.

MOVEMENT SKILL DEVELOPMENT

Determining students progress and the contribution of physical education

There is limited evidence to suggest that there has been a change in teachers' ability to: determine student progress in movement skill development, or gather evidence of how PE contributes to development of movement skills. This is not surprising given that an explicit focus on movement skills, teaching, assessment or data gathering was not apparent within the PD.

Teacher comments, from the second questionnaire, highlighted that the majority of teachers had started using a wide range of assessment practices within their PE education classes. Drawing on their understanding of assessment, from contracts such as AToL and AFL, teachers had undertaken to use peer, and self-assessment with PE. However, when assessing movement skills teachers reported using observations (50%) and checklists (22%) and as the preferred assessment options, particularly to monitor perform discrete movement skills. Less than 20% of teachers indicated that they gathered data pre and post the teaching of skills, which would make it difficult for most teachers to monitor progress. At none of the case studies schools was the information gathered by individual teachers in one year passed on to the teacher of the students in the following year, therefore monitoring of student progress was limited and did not provide evidence of the contribution of PE across the levels.

Interviewed teachers reported that their judgements about students progress was based on subjective decisions/observations, the level of which being dependent on the teachers own understanding of the movement skill in question. Those teachers who have experience participating in a range of PA's themselves, or as team coaches, for example, Walter, Octavia and Hillary, appeared to be in better positions to gauge student movement skills and student progress than non participants. However, there

was no evidence to suggest that these teachers had developed strategies to monitor student progress differently because of the PD. In order for teachers to monitor student movement skills and progress teachers' first need to have adequate content knowledge of movement skills.

In addition, it is important to note that students are likely to develop movement skills in a range of settings, including sports teams, in their back yards, and at break times. As parents indicated children's' skill development occurred due to factors such as maturity, growth, outside opportunities, playing a at home, play at break times, and in some instance PE lessons. This research raises the question of how to monitor PE's direct contribution to student movement skills development, while still accounting for variables, such as the factors listed above.

STUDENT PROGRESS LINKED TO LEVELS OF DEVELOPMENT OR ACHIEVEMENT OBJECTIVES

With the traditional sports based programmes that schools were running before the PD there was little evidence to demonstrate links between student progress and levels of development, and only evidence of links to HPENZC achievement objectives for Strand B, Achievement Aim One. While some schools showed evidence of links to HPENZC within their planning, it was not clear that teachers had an understanding of achievement objectives they were making links to. The 2006 PD has allowed teachers to explore a wider range of HPENZC achievement objectives, through the lesson and unit plans provided by SSS. However, this appears not to have challenged teachers to be able develop their curriculum knowledge in a manner that will allow them to make links between student progress and HPENZC. It appears in the evidence, that while many teachers have broadened their understanding of teaching PE, few have developed knowledge of HPENZC and therefore are unlikely to be able to make links to this in their planning for PE.

CO-CURRICULAR PHYSICAL ACTIVITY

It is important to reiterate that co-curricular PA was not the focus of the PD received by most teachers in the case study schools. The exception was teachers at Otter, who had extensive exposure to PD relating to curricular and co-curricular PA, while the most other schools had access to RST only in the form of Toolkit training and when they ran the practical activities during staff meetings. The limited emphasis placed on

co-curricular PD is reflected in a limited change to practice in this area across all case study sites.

However, the focus on PA within the schools has resulted in a few teachers experiencing a change in involvement in co-curricular PA. In response to the second questionnaire, 47 percent of teachers (n=57) indicated that their involvement in co-curricular PA had changed. Of those reporting increased involvement, 12 percent²³ indicated that they had taken-up responsibility for coaching or managing teams, while over 30% had become more involved in syndicate or school based PA's. Other changes included being involved with the schools' PA committee or equivalent (18%), and liaising with community to facilitate PA opportunities (12%). Further research after the RST education personal have worked with the schools would be useful to monitor the impacts of their work on teachers involvement of co-curricular PA in schools.

CONFIDENCE AND MOTIVATION

The limited focus on co-curricular PA within the PD appears to have resulted in little change to teachers motivation or confidence to offer co-curricular PA. The case studies highlight two exceptions. For Mildred (Westfield), a growing confidence in her ability to deliver *Jump Jam* and run a school Aerobics team, encouraged her to take up leadership of her regions interschool aerobics competition. While this had been a challenge for her, she came to realise that she was capable of leading in a PA context. Murray, Mud River, had been motivated by his passion for sport, and recognition of the limited opportunities his students had to participate, to establish the interschool competition. For teachers at Mud River the introduction of a regular interschool sporting competition had provided some teachers with the motivation to be involved in co-curricular PA. No other case studies highlighted an increase in motivation or confidence amongst teachers to contribute to co-curricular PA.

²³ These are not exclusive categories

IMPACT OF PHYSICAL ACTIVITY INITIATIVE ON STUDENT ACHIEVEMENT

STUDENT PARTICIPATION

Curricular PA

Nearly all teachers who had trailed TGfU and explored ability grouping reported positive effects on students' participation in PE time. The student centred approach, in conjunction with grouping studies based on ability, or having students self select groups, appears to have provided a more inclusive environment where students' felt more comfortable and confident participating. All teachers (n=57) commented that more students appeared to be motivated toward activity during PE lessons, since changes had been made to the way they structured their lesson.

For example, Octavia had found that by allowing students to identify their own level of ability and then group themselves accordingly, their involvement in the invasion games unit had increased, especially for those students that were usually less enthusiastic participants. Other teachers including Kylie, Mildred, Bronwyn and Gordon had experienced similar outcomes. These teachers reported that the children had more ownership in the lesson, and there was a less teacher directed element, which made for a more positive learning environment.

Break times

Before the PD, most schools felt that their students were physically active during break times, and that many students were engaged in co-curricular PA in the form of school teams, or clubs and organisations out of school. Therefore, in most instances teachers had not observed an increase in participation out of the classroom time, although some teachers reported changes to the way students participated at in co-curricular activities. For instance, Sam at Steephill, reported that her students had a much wider range of tag games that they were now able to play at break times, having learnt them in class. Teachers at Meteorite had also seen students transfer games they had learnt in PE out into the playground. The Principal at Plains reported that students taught using the TGfU approach in PE, played sport differently from other students, as they now looked for space, and focussed more on strategy than just skill.

Teachers had not identified an increase in student participation in PA's outside of the school day. Some parents reported that their children were now involved in out of school teams/activities, such as swimming. Although some of these parents indicated that their child had only started participating in these activities as they were of an age where they were able to join teams, and it was not due a new found desire to be involved.

STUDENT ATTITUDES

Teachers and parents reported that most children had improved attitudes towards participation in PA. Teachers felt that the use of the TGfU approach, sharing learning intentions and different grouping strategies created a positive learning environment where students were more positive about being involved. Student attitudes appear to have changed in relation to their own level of comfort, confidence, their willingness to engage in discussion during PE, and in their interaction with their peers in PA settings. Changes in attitudes were evident in interviews with students, and teachers. Teachers commented that for some students who had not been confident participants previously, the new approach teachers had used to deliver PE had transformed student attitudes. For example, Kylie felt that by sharing learning intentions, those less confident students were clearer about the expectations for achievement, and therefore were more confident about participating.

It is worth noting that while a change in attitude was evident in the discussions had with students, across most sites, there was some negativity about changes that had taken place. For some students there was frustration as to the reduction in the amount of sport they got to play, and the repetitiveness of playing the same games. Mildred's students commented about how bored they were with doing the same games all the time. These examples highlight the issue of teachers having a limited repertoire of activities/games they are able to use in their teaching/learning programmes, and the impact this may have on student enjoyment.

STUDENT KNOWLEDGE

The focus on PA as part of the ten case studies school PD programme in 2006 appears to have had a range of impacts on students knowledge about PA. Teachers and students commented on the discussions that were now occurring with the lessons. Senior students in particular talked about how the 'team talks' or 'huddles' allowed

them to plan tactics and strategies, so they could play the game better. They felt these discussions, along with opportunities to change rules made the games much more enjoyable for everyone. Students who had experienced TGfU appear to have developed an understanding of strategies and problem solving associated with game playing. Students across all year levels, NE – Year 8, displayed knowledge of games, for instance: Year 1/2 students at Steephill talked of protecting the target, while senior students, at Plains and Mud River for example, described the need to improve communication if their team was to be successful. Across all studies the introduction of the TGfU approach would appear to have assisted students in their knowledge of games play, and in most instances their understanding of the strategies and tactics needed to successfully play games.

The focus on cooperation and teamwork within lessons appear to have enhanced many students ability to interact with their peers. For example, Edward and Bob (Meteorite) commented about learning to cooperate with the girls and not fight when playing games. While Mildred's students (Westfield) had learnt to get along with people and not scrap with them.

A disturbing trend reflected across schools was students' focus on the relationship between body size, fitness and health. This attitude would appear to be a reflection of both school and broader social messages about bodies. In the development of school programmes, care must be taken in terms of the messages students receive.

STUDENT MOVEMENT SKILLS

It was not evident from teacher or student comments that there had been a significant improvement in students' movement skill development due to changes in the delivery of PA in the schools. According to teachers, student had continued to development movement skills, however not as the explicit focus on many lessons. In each case teachers, particularly lead teachers, had trailed the TGfU approach that focuses more on developing thinking players and includes movement skill development when appropriate. Therefore, the learning intentions in many lessons focussed on strategic thinking and problem solving in games as opposed to movement skill development.

Student comments demonstrated the breathe of learning that had occurred for them during the year. In most instances students talked about playing games better and also about the discrete skills they had learnt, such as to: throw/catch, skip, high jump,

run faster and kick. Parents report improvement in movement skills however most felt that this was due to a wide range of factors including:

- Confidence in their own ability;
- Age and maturity;
- Sport in teams outside of schools; and
- Teacher encouragement and focus on physical development.

In summary, it would appear that students have continued to develop the movement skills that teachers previously focussed on within their multi-activity sports based PE. Yet, teachers have delivered the learning using different approaches, which have provided students with a broader learning focus, and in environments that appear more conducive to student learning.

IMPACTS ON SCHOOL PHYSICAL ACTIVITY CULTURE

Across all sites, teachers and senior managers did not talk explicitly about the schools PA culture. Mud River, Meteorite and Waterfall Schools provide examples of how staff valued PA as part of the broader school culture, while not understanding the concept of 'physical activity culture' as defined by Ministry of Education & SPARC (2006, in draft) document, *Physical Activity Culture in Schools*. All schools appeared to value the role PA plays within the wider school culture, while not consciously focusing on developing a specific PA culture. Nevertheless, the interviews and questionnaires conducted in the evaluative research provided insights into the PA cultures of the schools, these are reported in the following sections.

SCHOOL PHYSICAL ACTIVITY CULTURE

There is little evidence, within the case study schools of impacts of the PD on the wider school community, with the exception on the impacts on curricular PA, that are detailed in earlier sections of this analysis. Few schools saw a change to co-curricular programmes, school ethos, organisation, environment, or the development of partnerships in the wider community, as a direct result of PD undertaken in Model 2. However, minor changes occurred in some schools, such as, the purchase of new PA equipment for break times activities (for example, Steephill and Waterfall), more

parents involved in coaching (Westfield) and the inclusion of interschool sporting competitions (Mud River).

It was apparent in the evidence that all ten schools were pleased with the co-curricular opportunities they provided their students. Parents also indicated that their children 'often' had a wide range of opportunities to be involved in PA while at school, including participation in school sport, PE in class time, and to a lesser extent after school sport organised by the school. The majority of parents said there was playground equipment provided by the school (93%) and students 'often' had opportunities to be active at break times (91%). There was one exception, Bush, where 64% of parents felt that students had opportunities to be active at break times, however less than 60% of parents felt there was adequate playground equipment. The evidence would suggest that co-curricular programmes are available to all students in the ten case study schools, however teachers did recognise the effort that was needed to maintain and enhance these.

SUPPORTIVE SCHOOL AND COMMUNITY FACTORS

As detailed in the draft *School and Community Physical Activity Culture* document (MoE, 2006) schools need to consider their: ethos and organisation, curriculum programmes, environment, co-curricular PA programmes and community and partnerships in order to develop a positive PA culture. Across the ten case study schools there was an extensive range of factors evident, prior to the PD, that contributed positively to their PA culture, including:

- Having teachers that were committed and passionate about PA and willingly offered support for students to participate, both in curricular and co-curricular activities. The levels of commitment and support appeared to vary greatly dependent on each teacher's personal confidence and ability with PA;
- Providing a range of opportunities for student participation in PA at break times, through access to equipment/facilities, and in some instances, Steephill and Mud River, supervised activities fun at break times by adults, other than teachers;
- Provision for student participation in school-wide and interschool sporting events, supported by teachers as coaches, and to a lesser extent external coaches (from parents, local clubs);

- Accessing local community run facilities and clubs to support delivery of both curricular and co-curricular programmes;
- Supporting teachers to be involved in organisation of interschool competitions, e.g. Mildred at Westfield and Hannah at Plains;
- Providing a wide range of PA opportunities for students within the classroom programme, not necessarily in the form of PE;
- Recognising student success and participation in PA, both inside and out of the school context; and in some instances
- Ensuring parents have opportunities to be involved in decision-making, relating to PA in the school community.

The focus on PE within the PD encouraged schools to consider a wider range of factors to support a positive PA culture including the:

- Provision for on-going PD and support for both curricular and co-curricular PA, delivered by lead teachers and external 'experts' in the form of advisers;
- Creation of a PE curriculum team;
- Review and redevelopment of the PE programme; and
- Integration of general pedagogical knowledge into PE lessons.

While nine of the ten schools, Otter being the exception, had limited contact with the RST's as part of the PAI, all schools had recognised that RST's could support them delivering PA, with such things as equipment, and specific sports expertise (ripper rugby etc) to work with students. There was some confusion as to whether these sessions replaced PE lessons or were to be viewed more as a co-curricular opportunity, regardless teachers all felt that these days had provided students with the chance to explore a wider range of sports. It would appear that prior to the PD schools worked towards developing a positive PA opportunities for students, with a particular emphasis in the area of co-curricular programmes, while the PD in 2006 encourage them to enhance understanding and focus on the development of their curricular programmes.

FUTURE STRATEGIES

Across all sites, teachers and school leaders identified a range of strategies, process, and opportunities needed to ensure the maintenance and enhancement of the learning

that had taken place in 2006. Most of these strategies related to continued improvement in the teaching of PE, including:

- Provision for ongoing PD, provided by both SSS for all staff, and particularly new staff to the school. Lead teachers recognised that they would play a vital role in supporting the development of other teachers, however lead teachers also commented that they would need on-going support from SSS. Included in the PD all teachers were seeking was feedback from trained PE professionals about individual lessons and school-wide programmes, i.e. this is what, as a school, you are doing well and this is what you could do to improve;
- Development of a comprehensive long-term plan for PE, including unit and lesson plans, guidelines for assessment and maintaining evidence that meets the needs of the diverse range of learners in each class;
- Access to ideas for units and a variety of activities for use both inside and outside the classroom including, TGfU resources, practical demonstrations, books, and useful websites; and
- Opportunities to 'take time out' of the classroom to share learnt concepts at length with fellow syndicate members.

Across all case study sites, teachers commented that they needed 'time'. Time to work through the information they gain access to during PD opportunities, time to work within their syndicates or schools to trial new approaches and content, and time to process the learning and focus on one area of development as opposed to competing PD agendas.

In addition, to strategies needed to support the development of PE, teachers identified other factors that would support improving PA in their school, including:

- Support for school sport, in the form of coaches and managers, accessed from within the teaching staff and wider community;
- Maintenance and enhancement of PA equipment;
- Support or continued support from the BOT for funding of equipment and use of community facilities; and
- Ensure parents are aware of developments that are occurring in the school, so that they can provide support, therefore fostering the school-home partnership.

CHAPTER SIX: MAJOR FINDINGS

The following section highlights the major findings of the cross case analysis, in relation to the systemic issues that impacted on the PD, and the impacts of the PD on teachers, students and school PA culture:

Systemic Issues

While the direction and focus of national policy, relating to the Physical Activity Initiative, were outlined, various interpretations and distributions of this policy, both at regional level (advisory services, both SSS and RST's) and in each local context (schools) appeared to impact on the professional learning of teachers. The systemic issues that existed or were manifested through the interpretation and distribution of the Physical Activity Initiative, at the policy, professional development, and school level, are highlighted below.

POLICY LEVEL

For further detail of the following major findings see, Chapter 5, Section: Systemic Issues, Heading: Interpretation of Model 2.

- RST's had limited involvement in Model 2 schools during 2006, however they intend to work in Model 2 schools during 2007;
- There was confusion, amongst SSS Advisers, principals and teachers, as to what was meant by a whole-school model of PD.

PROFESSIONAL DEVELOPMENT

For further details of the following major findings see, Chapter 5, Section: Systemic Issues, Heading: Professional Development: Providers and Delivery.

- SSS Advisers were enthusiastic and passionate about making a difference in primary schools, however, they appeared constrained by systemic issues such as contractual arrangements, limited time in each school, and opportunities to undertake PD;
- The contractual obligations of Model 2, and the one year time frame restricted the interactions SSS Advisers had with schools, and the content they are able to deliver, resulting in a somewhat standardised programme of PD, as

opposed to a programme designed to meet the individual needs of the schools;

- SSS Adviser knowledge was limited by their previous experiences and lack of PD they receive before working in schools. This appeared to make them reliant on regional co-ordinators, and potentially restricted their ability to broaden content to meet individual school needs;
- Theoretical models (Kugel and Smyth) intended to form the framework for the PD, were not evident in the programme or delivery of the PD. It would appear that SSS Advisers did not have a shared understanding of the theory or practices associated with these models;
- Teachers' valued resources, ideas, 'instant' solutions, and things that worked. Providing these, in the form of lesson/unit plans, games and activities, within the PD programme assisted teachers to move forward and develop confidence, but also appeared to create a level of dependence for many teachers. The short period of time that SSS were in the schools in Model 2 did not actually allow the advisers to start withdrawing support slowly to create independent teachers;
- A lead teacher approach raised a series of issues, including: disparity in levels of professional learning between lead teachers and others; limited time for lead teachers to understand and trial new approaches before being expected to support other teachers; difficulty in the sharing of information and new knowledge with other staff; and finally the possibility of change to be sustainable.

SCHOOLS

For further details of the following major findings see, Chapter 5, Section: Systemic Issues, Heading: Schools.

- When schools had commitments to more than one PD contract, the impact of the PD on teacher professional learning appeared to be lessened;
- Teachers entered PD with different levels of understanding, experience, confidence and willingness to change. The evidence to date would suggest that in working with teachers as learners, it is important for advisers to develop and deliver PD that caters to the needs of all groups;

- School processes and the commitment of school leaders to supporting the PD, played an important role in learning outcomes for staff.

Impacts on teachers

For further details of the following major findings see, Chapter 5, Section: Impact of Physical Activity Initiative on Teachers.

- Teachers' developed an understanding of how to apply general pedagogical knowledge/practice, such as sharing learning intentions, questioning, and ability grouping, in their PE lessons. The adoption of these general pedagogical strategies had changed the structure of teachers' PE lessons;
- The introduction of the TGfU approach allowed teachers to develop PE specific pedagogical content knowledge, and explore a wider range of learning outcomes within PE lessons, including cooperation, conflict resolution, and problem-solving and strategic thinking in games. However, the evidence raised concerns about teachers: understanding of the philosophical intent of the TGfU approach, that it is more than just playing games; ability to move beyond the units and activities modelled by advisers, to be able develop their own units of work; and understanding of the role TGfU can play in the PE curriculum;
- Evidence from the case studies indicated that teachers had moved in terms of how they teach not what they teach, and how they developed students' ideas and skills in PA. The focus on general pedagogical knowledge, within the PD, at the expense of PA pedagogical content knowledge appeared to restricted teacher's opportunity to develop content and curriculum knowledge base, which limits the opportunities for students in schools;
- There is limited evidence to suggest that there had been a change in teachers' ability to determine student progress in movement skill development, as this was not a major focus of the PD they received.
- The evidence highlighted that teachers had limited PD on how to monitor PE's contribution to the development of movement skills. However, the research raised the question that there are issues with monitoring PE's direct contribution to student movement skills development, as students have

opportunities to develop movement skills in a range of settings, including sports teams, in their back yards, and at break times; and

- It appeared that while many teachers had broadened their understanding of teaching PE, few had developed knowledge of HPENZC and therefore were unlikely to be able to make links to this in their planning for PE, or in their monitoring of student progress against the achievement objectives.

Impacts on students

For further details of the following major findings see, Chapter 5, Section: Impact of Physical Activity Initiative on Student Achievement.

- The development of teachers' general pedagogical knowledge within the PE lesson appeared to impact on students' attitude and participation within those lessons. According to both students and teachers, students' attitudes appeared to have changed in relation to their own level of comfort, confidence, their willingness to engage in discussion during PE, and in their interaction with their peers in PA settings;
- Some students had the opportunity to explore more than movement skills within physical education, with their learning instead focused on: problem-solving, decision-making, and strategic thinking in games contexts; and the development of interpersonal skills such as conflict resolution, cooperation and teamwork;
- Three schools observed changes in the ways students participated in co-curricular activities at break times, particularly in relation to the ranges of games they played, and how they played the games. Teachers suggested that these changes were due to new learning in PE lessons; and
- 81 percent of parents were aware that children's movement skills had improved during 2006, however less than 10% of parents identified school based PA as the prime reason for this development, instead identifying: age/maturity, opportunities outside of school, such as sports clubs and swimming lessons; and encouragement from home as main reasons for movement skill development.

Physical Activity Culture

For further details of the following major findings see, Chapter 5, Section: School Physical Activity Culture.

- Schools were not conscious of the concept of a PA culture, as defined by the Ministry of Education (2006, in draft), but were aware of the role PA plays in the wider school culture;
- Development of school PA culture appears to have been restricted by the limited involvement of RST's. Nine of the ten schools focused predominantly on the curricular aspects of the PA culture, leaving school ethos and organisation, co-curricular PA, environment, and community link and partnership to be addressed later;
- The broad aims, of Model 2, of the Physical Activity Initiative were not realised as planned for at a policy level. Schools and teachers identified a range of strategies and opportunities that would assist them to meet the aims of Model 2, and develop physical activity, curricular and co-curricular. These included: ongoing professional development, access to resources and ideas for use in the classroom; development of a comprehensive school-wide physical education programme, more support for school sport; maintenance and enhancement of physical activity equipment; and better communication with parents.

CHAPTER SEVEN: RECOMMENDATIONS

This chapter sets out recommendations for policy, professional development, principals and Boards of Trustees, and further research.

RECOMMENDATIONS FOR POLICY

Based on the findings of this research, recommendations for policy are:

- a. Greater alignment of Regional Sports Trusts and School Support Services at policy and operational level, when working in educational settings. Both the case studies and the literature review highlight that development of school and wider community cultures and effective partnerships are needed, in order to foster positive attitudes and increased participation in young people.
- b. Clarification and operationalisation of appropriate whole-school approaches for physical activity professional development within national policy, School Support Services and Regional Sports Trusts.
- c. Longer-term in-depth professional development is required, as time and appropriate change management strategies are needed for the development of teacher knowledge. For example, physical activity interventions in the USA, and UK, run over an extended period of time, up to three years, with reducing levels of support each year. Both the case studies and the literature review highlight that professional learning opportunities for teachers need to include: ongoing sessions of learning, collaboration, and application, accompanied by school and classroom-based support, over a sustained period.
- d. Opportunities for professional development providers to develop their own content and pedagogical content knowledge of physical activity, so that interventions can be implemented in a valuable and cost effective manner.

RECOMMENDATIONS FOR PROFESSIONAL DEVELOPMENT

The findings of this research highlight the following recommendations for professional development, and ongoing professional learning opportunities for both teachers and providers:

- a. The development of teacher knowledge, including pedagogical content subject, content knowledge and curriculum knowledge, is needed in addition to general pedagogical knowledge, in professional development programmes relating to curricular and co-curricular physical activity.
- b. The teachers be provided with courses, offered by appropriate professionals and/or organisations from the community, that focus on the development of personal skills and knowledge relating to physical activities. For example, the literature review and case studies highlight that generalist teachers, in particular, need additional opportunities to enhance their personal understanding of, and proficiency in, physical activities, in order to develop professional confidence and competence in both curricular and co-curricular physical activity settings.
- c. The lead teacher approach can be effective when a long-term programme is implemented. However, concerns raised, in the research, about the lead teacher approach for effecting sustainable change, suggest that for change to occur, consideration needs to be given to the extension of the programme rather than intensification. For example, spread a similar programme over a longer time.
- d. The allocation of time for advisers to undertake professional development, before engaging schools in interventions. This would allow advisers opportunities to physical activity content and pedagogical content knowledge, in order to be able to provide appropriate advice and guidance to teachers and schools.
- e. The provision for opportunities and greater support to assist advisers to develop a shared understanding of professional development and learning, models, theories and best practice approaches. Thereby building on sustainable best practice models.

RECOMMENDATIONS FOR PRINCIPALS AND BOARDS OF TRUSTEES

Based on the findings of this research, recommendations for principals and Boards of Trustees are:

- a. Consider the balance of initiatives and the impacts of these initiatives on staff. Multiple professional learning opportunities need to be managed so that change becomes sustainable.
- b. Provide support for lead teachers, in terms of time, mentoring and realistic expectations, within the professional development process. This would allow them to develop their own and others understanding of physical activity, as part of a sustainable change process.
- c. That principals actively engage in providing leadership and support for professional learning, and the change management process, in relation to developing a holistic understanding about the nature of curricular and co-curricular physical activity.
- d. That consideration be given to the development of processes for the school-wide dissemination of learning and knowledge, the development of a culture of sharing information, and the building of best practice.
- e. That schools work towards enhancing their PE programmes, both in terms of quantity of time and provision for proper design and delivery. The literature review and case studies highlight that enhancing PE programmes can improve young people's enjoyment of, and participation in, leisure time physical activity.

RECOMMENDATIONS FOR FURTHER RESEARCH

This research highlights some areas for further research, including:

- a. The exploration of alternative models for the facilitation and delivery of physical activity professional development and learning.
- b. The impacts of Regional Sports Trust involvement in the professional development of co-curricular physical activity in primary schools.
- c. Long-term research to explore the sustainability of professional learning opportunities focused on curricular and co-curricular physical activity.

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