



The International Baccalaureate Primary Years Programme (PYP) in Victorian Government Primary Schools, Australia

Final Report

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Abbreviations

ARIA	Accessibility/Remoteness Index of Australia
AusVELS	Victorian Foundation to Year 10 curriculum, which incorporates the Australian Curriculum F-10 for English, Mathematics, History and Science within the curriculum framework first developed for the Victorian Essential Learning Standards (VELS)
CSF	Curriculum and Standards Framework, the Victorian curriculum prior to VELS
DEECD	Victorian Department of Education and Early Childhood Development
IB	International Baccalaureate
IBO	International Baccalaureate Organization
ICSEA	Index of Community Socio-Educational Advantage
NAPLAN	Australian National Assessment Program – Literacy and Numeracy
PYP	International Baccalaureate Primary Years Programme
VCAA	Victorian Curriculum and Assessment Authority
VELS	Victorian Essential Learning Standards, the Victorian curriculum from 2006-2013

Executive Summary

The aim of this research study was to examine and document the impact of the IB Primary Years Programme (PYP) implementation on student outcomes, pedagogical practice and school culture in the thirteen Victorian Government primary schools that have been authorised to offer the PYP. The project also sought in-depth understandings of the factors that influence schools to implement the PYP, to what extent the perceived benefits of PYP implementation are realised in practice and the emergent challenges and enablers associated with the introduction of AusVELS.

The research design adopted for this research study employed a mixed-methods approach to obtain and analyse both quantitative and qualitative data in order to address the key questions in a comprehensive manner. The methods included analysing relevant existing survey and assessment instruments, designing and analysing specific surveys, and interviews and observations in case study schools. In the context of Victorian Government schools, relevant survey and assessment instruments include the National Assessment Program – Literacy and Numeracy (NAPLAN) and DEECD school surveys including the Teacher and Parent Opinion Surveys and the Student Attitudes to School Surveys. Only the DEECD Parent Opinion Survey is analysed in this study as this survey provides an insight into parental perspectives on the schools not obtained through other means.

To complement and extend the NAPLAN results, the RMIT team developed a principal, teacher and student (Grades 5 and 6) survey to collect perceptions about the extent to which PYP is impacting on: student achievement; student motivation; perceptions of teacher effectiveness; school connectedness; teacher pedagogical beliefs and practices; teacher efficacy and engagement; and school culture and climate (see Appendixes A-C). All of the surveys asked a mixture of closed and open questions. Each of the surveys was made available online to facilitate access by participants and analysis of responses.

All thirteen PYP Victorian Government schools were invited to participate in the research study, and the NAPLAN data from all of these schools, accessed via the *MySchool* website is analysed in this report. A total of five schools agreed to participate in the survey component of the study and completed the three RMIT surveys (principal, teacher and Grade 5 and 6 student questionnaires). To provide a richer picture of the implementation and impact of the PYP in the Government schools three case studies were completed. These case studies provided insight into each school and its context, the changes in teaching practices at the school and changes to the school climate and culture as perceived by key stakeholders (school leadership team, teachers and parents). The three schools that were the focus of case studies included a small school, a medium sized school and a large school. The schools had been authorised as PYP schools at three different times and were situated in different types of local communities with a range of non-English speaking backgrounds.

The investigation found that:

- PYP student outcomes on the Year 3 and 5 reading and numeracy tests in the thirteen schools, as measured by NAPLAN in 2012, were higher than the Australian average, except for one school in numeracy.
- The students at PYP Government schools, for the cohorts 2008-2010, 2009-2011 and 2010-2012, achieved higher levels in both reading and numeracy when compared to Like and Australian schools at both Years 3 and 5. Effect size outcomes, however, indicate greater achievement growth among Like and Australian schools.

- Principals in the participating schools were very supportive of the PYP and viewed the programme as offering a range of benefits for the school.
- Both principals and teachers in the participating schools are very strong in their beliefs that the PYP has contributed to student learning, particularly academic achievement, student development of Learner Profile attributes, and student motivation.
- Students in the participating schools were very positive about their learning opportunities, teacher impact and school environment.
- Principals were strong in their beliefs that the PYP had had an impact on their teachers' beliefs, practices and engagement.
- Teachers agreed that the PYP had had an impact on their beliefs, practices and engagement.
- Principals were confident that the PYP had had positive benefits on the culture and climate in their schools.
- A clear majority of the teachers were also of the view that the PYP had had positive benefits on the culture and climate in their schools.

The factors that influenced the schools to implement the PYP were very much related to its curriculum – it was an internationally recognised and validated curriculum that would engage and challenge students (especially the high achieving ones) – and also its inquiry based student centred pedagogy, together with its global perspective on learning and teaching.

With respect to emergent challenges and enablers associated with the introduction of AusVELS, at the time of the surveys and interviews, most of the schools were still in the early stages of auditing their PYP units of inquiry against the AusVELS curriculum. The schools were finding that they had to change and adapt the PYP units of inquiry, sometimes moving them across year levels, for example, to better fit the AusVELS requirements, but this was not extensive. Some teachers were finding these changes challenging, but the principal from one school who had completed the process was very happy with the outcome as s/he felt that the school now had the AusVELS and PYP scope and sequence information blended into a seamless document.

The case studies provided a richer picture of the implementation of the PYP in three Victorian Government schools, and illustrate successful implementation of the PYP and the benefits of the PYP for student outcomes. As noted above, each of the schools is different in terms of its size, location and time of joining, and the proportion of the students who come from a language background other than English; however there is a shared enthusiasm for PYP across the school leadership teams.

Each of the case study schools had sought authorisation as a PYP school because of a perceived need to differentiate their particular school from other schools in the area, and the anticipated benefits of the PYP curriculum for student learning.

Staff recruitment, retention and staff familiarity with PYP was an ongoing challenge in two of the case study schools, both of whom have many new teachers each year. Professional development for teachers is a challenge in these circumstances because of the cost and the time needed to undertake it, but it is also recognised as essential for the success of staff adopting the inquiry-based teaching of PYP and implementing the other essential components of the PYP curriculum framework.

Parent engagement (as reported by the principals) as well as parent satisfaction (as reported via the DEECD Parent Opinion survey findings) varied across the case study schools, but each were clearly working hard to attain good parent engagement and familiarity with PYP.

Each of the case study schools mentioned the costs of offering the PYP in terms of the membership cost and the cost of the professional development programs for the school, and the cost of incursions and excursions for the parents. It was suggested that IB membership should be costed on a per student level rather than a per school basis and that perhaps more professional development could be held in Melbourne rather than interstate or overseas.

Overall, the findings from this study add to the growing literature that reinforces the importance of school leadership support, recruitment of suitable teachers, providing teachers with appropriate professional development, and supportive workload allocations, for effective education program implementation. The findings also suggest that the PYP can support positive student outcomes in government schools, including academic outcomes on national standardised tests.

1. Introduction

The International Baccalaureate Primary Years Programme (PYP), for students aged 3 to 12, focuses on the development of the whole child as an inquirer, both in the classroom and in the world outside. Underpinned by a transdisciplinary approach to learning, the PYP is a challenging program that demands the best from both motivated students and teachers.

In Australia, there are currently 92 PYP schools with the majority located in south-eastern states. This includes 35 schools offering the PYP in Victoria. Of these, there are 13 Victorian Government primary schools that are the focus of this research study.

The aim of this research study was to examine and document the impact of the IB Primary Years Programme implementation on student outcomes, pedagogical practice and school culture in the thirteen Victorian Government primary schools that have been authorised to offer the PYP. The project also sought in-depth understandings of the factors that influence schools to implement the PYP, to what extent the perceived benefits of PYP implementation are realised in practice and the emergent challenges and enablers associated with the introduction of AusVELS (and the Australian National Curriculum)¹.

The outcomes of this study are expected to inform the Organization's development of school supports and professional development services, as well as to assist interested, candidate and authorised IB schools and teachers to implement the PYP effectively and successfully.

¹ As AusVELS is the Victorian Foundation to Year 10 curriculum, which incorporates the Australian Curriculum F-10 for English, Mathematics, History and Science within the curriculum framework first developed for the Victorian Essential Learning Standards (VELS) this research study only investigated the schools responses to AusVELS. This report will therefore only refer to AusVELS in the findings and discussions.

2. Background

As the focus of this study is the implementation of the IB Primary Years Programme in Victorian Government schools this section provides background information on both the PYP and the curriculum and reporting requirements for Victorian Government schools. The section also includes a review of some other relevant research studies of the implementation of the PYP in other contexts.

2.1 The IB Primary Years Programme

The IB Primary Years Programme (PYP) is a curriculum framework designed for students aged 3 to 12. It focuses on the development of the whole child as an inquirer, both in the classroom and in the world outside to prepare them to be active participants in a lifelong journey of learning. The PYP is defined by six transdisciplinary themes of global significance, which are explored using knowledge and skills derived from six subject areas, with a powerful emphasis on inquiry-based learning.

The PYP, which was launched in 1997, grew out of a former International Schools Curriculum Project (ISCP): “Its aims were to:

- produce a common curriculum for international primary education that would suit all the learning communities represented within the group
- develop international-mindedness on the part of the learners” (IBO, 2009b, p.1).

The IBO has subsequently broadened access to the PYP by making it available to a wide range of schools who are willing to support the mission of the IB and prepared to commit to the standards and practices drawn up to ensure successful implementation of the Programme. To become a PYP school, schools first undertake a rigorous authorisation process over several phases.

The IB Primary Years Programme (2012):

- addresses students’ academic, social and emotional well-being
- encourages students to develop independence and to take responsibility for their own learning
- supports students’ efforts to gain understanding of the world and to function comfortably within it
- helps students establish personal values as a foundation upon which international-mindedness will develop and flourish.

According to the International Baccalaureate Organization (2012, p.2), “the PYP is flexible enough to accommodate the demands of most national or local curriculums and provides the best preparation for students to engage in the IB Middle Years Programme”. The relationship between the PYP written curriculum and the requirements of AusVELS in PYP Victorian Government primary schools, in terms of the emergent challenges and enablers associated with the introduction of AusVELS, are a focus of this study.

The PYP curriculum framework has three major components – the *written curriculum* (what do we want to learn?), the *taught curriculum* (how best will we learn?) and the *assessed curriculum* (how will we know what we have learned?). In this curriculum framework, “classroom practice, the taught curriculum, is a direct reflection of the written curriculum” (IB, 2009a, p.28) and assessment provides

feedback on the learning process. In PYP schools the development of these three components is guided by the PYP curriculum framework (IB, 2009a)².

The written curriculum is built upon five essential elements (knowledge, concepts, skills, attitudes and actions) and six transdisciplinary themes that “provide IB World schools with the opportunity to incorporate local and global issues into the curriculum and effectively allow students to “step up” beyond the confines of learning within subject areas” (IBO, 2012, p.2). As indicated in Figure 1, these themes are:

- Who we are
- Where we are in place and time
- How we express ourselves
- How the world works
- How we organise ourselves
- Sharing the planet.



Figure 1. The IB Primary Years Programme Curriculum Framework

Another important component of the PYP is the IB learner profile, which is the IB mission statement translated into a set of learning outcomes for the 21st century: “The aim of all IB programmes is to develop internationally minded people who, recognising their common humanity and shared guardianship of the planet, help to create a better and more peaceful world. IB learners strive to be:

- inquirers
- knowledgeable

² Victorian Government primary schools must also follow the curriculum standards, assessment and reporting guidelines from the Victorian Curriculum and Assessment Authority (VCAA) and the Department of Education and Early Childhood Development (DEECD), as discussed in this section.

- thinkers
- communicators
- principled
- open-minded
- caring
- risk-takers
- balanced
- reflective” (IB, 2009a, p.i).

Understanding how students in the Victorian Government primary schools are developing these Learner Profile attributes is another aim of this research study.

The PYP attitudes (Appreciation, Tolerance, Respect, Integrity, Independence, Enthusiasm, Empathy, Curiosity, Creativity, Cooperation, Confidence, Commitment) are also an important component of the PYP curriculum framework and these are incorporated into the Essential Agreements in each classroom.

The culmination of the PYP for all students is the exhibition in the final year of the Programme (IB, 2009a; IBO, 2012). This requires each student to demonstrate engagement with the five essential elements of the Programme (knowledge, concepts, skills, attitudes and action) and exhibit the attributes of the learner profile that have been developing throughout their engagement with the PYP. It involves students undertaking a collaborative, transdisciplinary process that involves them in identifying, investigating and offering solutions to real-life issues or problems, and provides them with an opportunity to demonstrate independence and responsibility for their own learning. How the exhibition was implemented in the case study schools was investigated as part of this study.

In PYP schools the principal needs to work closely with the School Board (or Council) and to provide opportunities for parents’ involvement in the learning process. It is important that the board has sufficient knowledge about and is committed to the common standards of the IB and the programme-specific standards of the PYP, and understands the process of becoming an IB World School (IB, 2009a, pp.11-12):

The board has an essential role as an ongoing support group before and after authorization to ensure the successful implementation of the PYP.

The head of school, or primary school principal, should let the board know that the PYP curriculum:

- promotes learning for each individual in the school regardless of their cultural background, mother tongue or special educational needs, as determined in the school’s admissions policy
- develops the conceptual understanding, knowledge, skills and attitudes needed for tomorrow’s workplace
- aims to produce students who will make a difference in a complex, challenging future
- alongside the students’ academic development, provides students with opportunities to develop their ethical perspectives, and to take action as a result of their learning
- works towards the achievement of student learning outcomes identified in the IB learner profile and in the subject-specific scope and sequence documents
- has been developed by highly experienced teachers and school leaders from a variety

of school contexts; they contribute a global perspective supported by compelling educational theory and research; no single national curriculum is imposed

- connects the school community to a global network of IB World Schools and provides access to extensive expertise and professional development
- facilitates transfer between schools
- provides opportunities to include parents in the learning process.

The role of school councils and parents in the decision to apply for PYP authorization and parental involvement in the PYP schools was another focus of this research in the participating and case study schools.

2.2 Curriculum and Reporting in Victoria

This section discusses the curriculum for Victorian schools (AusVELS), the government policies for schools around literacy and numeracy, preparation for NAPLAN and reporting requirements to parents.

Primary schooling in Victoria has a starting age of 5 years, so there are no Victorian Government schools offering the first two years of the PYP.

AusVELS

Primary schools in Victoria, whether they are Government, Catholic or independent, generally follow the Victorian Curriculum and Assessment Authority (VCAA) curriculum of the day. Currently this is known as AusVELS – an amalgamation of the previous VELS (Victorian Essential Learning Standards) and the new Australian Curriculum (VCAA, 2013a):

AusVELS is the Foundation to Year 10 curriculum that provides a single, coherent and comprehensive set of prescribed content and common achievement standards, which schools use to plan student learning programs, assess student progress and report to parents.

AusVELS incorporates the Australian Curriculum F-10 for English, Mathematics, History and Science within the curriculum framework first developed for the Victorian Essential Learning Standards (VELS). AusVELS uses an eleven level structure to reflect the design of the new Australian Curriculum whilst retaining Victorian priorities and approaches to teaching and learning.

Implementation of AusVELS commenced in 2013. Prior to this the Victorian curriculum was called VELS (Victorian Essential Learning Standards), which had been introduced in 2006, and this had succeeded the Curriculum and Standards Framework (CSF), which was first introduced in 1995 and then revised and republished as CSFII from 2000. AusVELS currently draws on four learning areas from the Australian Curriculum (English, Mathematics, Science and History).

The AusVELS curriculum is structured into strands, domains and dimensions (VCAA, 2013b). The three strands are:

- Physical, Personal and Social Learning
- Discipline-based Learning
- Interdisciplinary Learning.

Domains are distinct bodies of knowledge, skills and behaviours within each strand. Those that are drawn from the Australian Curriculum learning areas (English, Mathematics, Science and History) are organised into Content Descriptions (what teachers are expected to teach) and Achievement Standards (the quality of learning that would indicate that the student is well placed to commence the learning required at the next level of achievement). The other domains within AusVELS are drawn from the existing Victorian Essential Learning Standards (VELS) and are organised into learning focus statements and standards.

The domains associated with the three strands are as follows:

- *Physical, Personal and Social Learning*: Civics and Citizenship, Health and Physical Education, Interpersonal Development, Personal Learning
- *Discipline-based Learning*: The Arts, English, The Humanities–Economics, The Humanities–Geography, The Humanities–History, Languages, Mathematics, Science
- *Interdisciplinary Learning*: Communication, Design, Creativity and Technology, Information and Communications Technology, Thinking Processes.

Content description/Learning focus statements and Achievement Standards/standards for each domain are organised into dimensions (see VCAA, 2013b).

In addition to the strands, domains and dimensions there are three cross-curriculum priorities that are embedded in all learning areas:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia’s engagement with Asia
- Sustainability.

There are some similarities between the PYP curriculum framework and AusVELS across each of the domains in the Discipline-based Learning strand (The Arts, English, The Humanities–Economics, The Humanities–Geography, The Humanities–History, Languages, Mathematics, Science) and the Physical, Personal and Social Learning strand (Civics and Citizenship, Health and Physical Education). There are also commonalities between the learner profile and the Interdisciplinary Learning strand (Communication, Design, Creativity and Technology, Thinking Processes), and the Physical, Personal and Social Learning strand (Interpersonal Development and Personal Learning). However there is a noticeable difference between two in that the PYP is built upon five essential elements and six transdisciplinary themes, as well as approaches to learning and approaches to teaching, whereas AusVELS just consists of a set of prescribed content and common achievement standards.

Some primary schools choose not to follow the VCAA curriculum, and the International Baccalaureate Primary Years Programme (PYP) is becoming increasingly popular in Victorian schools (Marshall, 2014) as an alternative curriculum.

Literacy and Numeracy

The Department of Education and Early Childhood Development (DEECD) has a policy that the school leadership team is responsible for “ensuring all teachers from Prep to Year 4 are maintaining a daily two-hour literacy block and a one-hour numeracy block” (DEECD, 2013e).

There are also requirements for government schools NAPLAN preparation:

The school leadership team supports all teachers to focus on high-quality literacy and numeracy teaching.

This includes building students' capacity in:

- literacy comprehension and knowledge of text types, to support them in responding to the NAPLAN assessments
- demonstrating their knowledge and skills in English and Mathematics
- meeting the conceptual demands of NAPLAN assessments. (DEECD, 2011, p.13)

Both of these requirements have the potential to create tensions in the PYP Victorian Government schools as the focus of PYP is for units of inquiry built upon the five essential elements and the six transdisciplinary themes without separating out literacy and numeracy as distinct subject areas.

Reporting

All Government primary schools have to report to parents consistent with the Department of Education and Early Childhood Development's (2013a, 2013b, 2013c) assessment and reporting policy. This requires schools to use "common sense" report cards to report student achievement in Years Prep to 10. These are written in plain English to give parents a clearer picture of their child's progress against expected state-wide (AusVELS) standards:

All government schools are required to issue the report cards to parents twice a year and to offer interviews to parents to discuss their child's progress.

Student report cards must include:

- a graphical representation that shows achievement against the expected AusVELS during the reporting period
- a five-point A-E scale indicating achievement against the expected standard at the time of reporting. This scale indicates if a child is well above, above, at, below or well below the standard expected at the time of reporting (DEECD, 2013a).

2.3 Related research

The body of research into the implementation and impact of the PYP is growing, with several significant studies funded by the IBO in recent years. Of particular relevance and correspondence to this research study were the IBO funded investigations into the

- PYP authorisation and implementation process in Georgia, USA (Hall et al, 2009),
- Impact of the PYP and MYP in Texas, USA through a comparison of performance of IB schools on standardised state reading and math exams (Stillisano et al, 2010)
- PYP in India (Pushpanadham, 2012-2013).

Other research studies that are relevant here are a study of teachers' practices, values and beliefs for successful inquiry-based teaching in the PYP at a European international school (Twigg, 2010) and a study which compared the impact of the PYP on English language arts test scores of students at a South Carolina, USA school (Jordan, 2009).

The Hall et al (2009) study identified six successful strategies for successful PYP implementation: whole-school immersion, collaborative planning, continuous training, availability of resources,

strategies to promote community involvement, and support from the school leadership. They also identified a number of challenges for implementation: limited resources, integration of state standards with the PYP curriculum, the transdisciplinary nature of the Programme, and district and state expectations.

The Stillisano et al study (2010, 2011) of the impact of the PYP and MYP in Texas classrooms found no significant differences between IB schools and their comparison schools in math and reading achievement as measured by the Texas Assessment of Knowledge and Skills. However, structured classroom observations indicated that favorable instructional practices and student behaviors and activities occurred more frequently in IB classrooms than in non-IB Texas classrooms. They concluded that while this is suggestive that the overall quality of instruction is higher at IB schools, implementation varied from school to school, and some of the favorable instructional practices are used more often in some IB schools than in others. Positive outcomes of the IB as identified by teachers and administrators in case studies included increased teacher collaboration, authentic assessment, increased student motivation for learning, development of critical thinking skills, and increased student global and cultural awareness. Challenges identified by teachers and administrators included staff recruitment and retention, balancing the IB with state and district requirements, the additional time needed for collaborative lesson planning and paperwork, the difficulty and workload for students, student mobility, and lack of support from districts parents or teachers.

The Pushpanadham (2012-2013) study examined the impact of PYP adoption and implementation on learning, teaching and schooling in India. Findings indicate that trust and respect exists between teachers and school leaders; teaching in PYP schools is generally rated as “good” or “effective”; teachers were generally satisfied with their positions and had high levels of disciplinary self-efficacy, while relatively less so in their ability to enlist community involvement; students indicated high levels of emotional intelligence; and parents felt involved and satisfied with the Programme. According to this report, challenges for the PYP in India included teacher time-management issues due to heavy workload, a lack of teachers trained in international curriculum, and a need for increased recognition of the PYP within the country.

Jordan (2009) examined the impact of the PYP on English language arts test scores of third, fourth and fifth graders at a South Carolina, USA school and found that after controlling for gender, ethnicity and an indicator of income level, students had statistically significant higher scores than their peers at 16 district schools that did not offer the PYP.

Twigg (2010) studied teachers at a European international school and identified personal, professional and environmental factors that contributed to success in adopting the inquiry based teaching approach of the PYP. The important personal factors were: valuing children’s contribution to the inquiry process and providing a clear structure/framework, embracing the idea that “we are all learners”, belief of self-efficacy, open-mindedness, flexibility and positive attitude. Professional factors included: training and professional development (PD). The environmental factors were: encouragement of reflection and discussion, time and flexibility for planning, PD opportunities, support of whole school community (including parents) and facilitation by the PYP administrators/coordinators.

3. Research Design, Methodology and Key Questions

3.1 Key Questions

This research study addressed the following key questions:

1. What is the impact of implementing the PYP on student outcomes?

- a. In what ways does the PYP impact on student academic achievement?
- b. In what ways does PYP implementation contribute to student development of Learner Profile attributes?
- c. To what extent does the PYP impact on students in other ways, such as
 - Student motivation?
 - Perceptions of teacher effectiveness?
 - School connectedness?

2. What is the impact of implementing the PYP on schools?

- a. What is the impact of PYP implementation on teacher -
 - Pedagogical beliefs and practices?
 - Efficacy and engagement?
- b. To what extent has PYP implementation led to changes in school culture and school climate?

3. What factors, goals and motives influence schools to implement the PYP? And, to what extent are anticipated benefits of the PYP achieved?

4. In what ways are schools adapting PYP implementation in response to AusVELS (and the Australian National Curriculum)³?

3.2 Research Design

The research design adopted by the RMIT team employed a mixed-methods approach to obtain and analyse both quantitative and qualitative data in order to address the key questions in a comprehensive manner. Table 1 contains an outline of the research questions, data sources and analysis techniques.

³ As AusVELS is the Victorian Foundation to Year 10 curriculum, which incorporates the Australian Curriculum F-10 for English, Mathematics, History and Science within the curriculum framework first developed for the Victorian Essential Learning Standards (VELS) this research study only investigated the schools responses to AusVELS.

Table 1: Research Design

Research questions	Sub questions	Data to be used	Specific analysis techniques
1. What is the impact of implementing the PYP on student outcomes?	Student achievement	NAPLAN data (pre and post for new schools) RMIT Surveys teacher/principal	Effect size, comparison of growth with Like schools and Australian schools Descriptives (% means and SD). Thematic and qualitative cluster analysis using NVivo
	Student development of Learner Profile attributes	RMIT Surveys teacher/student/principal DEECD Parent Opinion survey Interviews/Case studies/Classroom observations.	Descriptives (% means and SD). ANOVA of teacher and student survey data to determine Cronbach's alpha. Thematic and qualitative cluster analysis using NVivo
	Student motivation	RMIT Surveys principal/teacher/student DEECD Parent Opinion survey Interviews/Case studies/Classroom observations.	Descriptives (% means and SD). ANOVA of teacher and student survey data to determine Cronbach's alpha. Thematic and qualitative cluster analysis using NVivo
	Perceptions of teacher effectiveness	RMIT Surveys teacher/student/principal DEECD Parent Opinion survey Interviews/Case studies/ Classroom observations.	Descriptives (% means and SD). ANOVA of teacher and student survey data to determine Cronbach's alpha. Thematic and qualitative cluster analysis using NVivo
	School connectedness	RMIT Surveys principal/teacher/student DEECD Parent Opinion survey Interviews/Case studies/Classroom observations.	Descriptives (% means and SD). ANOVA of teacher and student survey data to determine Cronbach's alpha. Thematic and qualitative cluster analysis using NVivo.
2. What is the impact of implementing the PYP on schools?	Teacher pedagogical beliefs and practices	RMIT Surveys teacher/principal Interviews/Case studies	Descriptives (% means and SD). ANOVA of teacher and student survey data to determine Cronbach's alpha. Thematic and qualitative cluster analysis using NVivo

	Teacher efficacy and engagement	RMIT Surveys teacher/principal Interviews/Case studies	Descriptives (% means and SD). ANOVA of teacher and student survey data to determine Cronbach's alpha. Thematic and qualitative cluster analysis using NVivo
	Changes in school culture and school climate	RMIT Surveys teacher/principal DEECD Parent Opinion survey Interviews/Case studies	Descriptives (% means and SD). ANOVA of teacher and student survey data to determine Cronbach's alpha. Thematic and qualitative cluster analysis using NVivo
3. What factors, goals and motives influence schools to implement the PYP?	To what extent are anticipated benefits of the PYP achieved	RMIT Surveys teacher/principal Interviews/Case studies	Thematic and qualitative cluster analysis using NVivo
4. In what ways are schools adapting PYP implementation in response to AusVELS and the Australian National Curriculum?		RMIT Surveys teacher/principal Interviews/Case studies	Thematic and qualitative cluster analysis using NVivo

4. Methods, including data collection methods and statistical procedures

The data collected and generated to inform this study is outlined in Table 1, with further details of the specific analysis techniques outlined below. Summarised, the research approach involved analysing existing survey and assessment data, designing and analysing specific surveys, and interviews and observations in case study schools.

In the context of Victorian Government schools, relevant survey and assessment instruments include the National Assessment Program – Literacy and Numeracy (NAPLAN) and DEECD school surveys including the Teacher and Parent Opinion Surveys and the Student Attitudes to School Surveys. Only the DEECD Parent Opinion Survey is analysed in this study as this survey provides an insight into parental perspectives on the schools not obtained through other means.

4.1 Analysis of NAPLAN data for the schools

The Australian National Assessment Program – Literacy and Numeracy (NAPLAN) was introduced to Australian schools in 2008. It involves the annual testing of students in Years 3, 5, 7 and 9 of schooling in Australian schools in Reading, Writing, Language Conventions (Spelling, Grammar & Punctuation) and Numeracy. NAPLAN is not intended to be a test of content but rather to test skills in literacy and numeracy that are developed over time through the school curriculum: “NAPLAN tests identify whether all students have the literacy and numeracy skills that provide the critical foundation for their learning, and for their productive and rewarding participation in the community” (ACARA, 2011, The tests). The results from these tests for each school are available on the Australian Government funded *My School* website (www.myschool.edu.au) together with a comparison with ‘Like schools’ and ‘Australian schools’.

Since its inception there has been a great deal of discussion about the NAPLAN standardised testing regime and that the results are being reported on the MySchool website where parents are able to compare a particular school’s results with those attained by other schools. Wu (2009), for example, argues that results are too flimsy at the individual level to be meaningful for student assessment (a point not relevant to this research study) and that year to year variations in class abilities make judgments of teacher performance using NAPLAN error prone (again not relevant to this study as multiple years are used). Her main contention, which is relevant to this study, is that: “NAPLAN results alone cannot show, with confidence, which schools are more effective and which schools are less effective... This is because school contextual information cannot capture all factors that have an impact on student performance other than school performance. NAPLAN results and school contextual information provide only indications for further investigation to find more direct evidence of school performance.” (p.5).

Other research findings, such as those discussed on website of the Effects of NAPLAN project at Murdoch University (<http://effectsofnaplan.edu.au/>), voice concerns about the reliability of NAPLAN results. For example, Quinnell (2011) discusses how the language used in numeracy tests such as NAPLAN can be inhibitors in test completion and achievement because there are differences between mathematical English and natural English. As Quinnell notes, “Mathematics word problems are often more complex than other text, requiring the reader to perceive a number of steps within a single problem or to make decisions about important information and that which is non consequential” (p.20). Students with language problems, or for whom English is not a first language, could therefore experience problems in understanding the NAPLAN numeracy tests. In a similar vein, Lowrie and Diezmann (2009) argue that students might have problems interpreting graphics in word

questions, and a NAPLAN numeracy test, which contain a multitude of graphs and diagrams, may in fact be a test of literate ability: 'Students' performance may thus be a measure of their ability to comprehend the graphical (or linguistic) components of a task rather than their knowledge of the mathematics within the task' (p. 146).

It is also important to note that NAPLAN does not measure many of the outcomes the PYP aspires to, as outlined in the learner profile. However, despite its limitations, for the purposes of this study, the NAPLAN results for the PYP schools do provide a standardised set of test outcomes that provide a basis for assessing the outcomes for the schools and for comparison with 'Like schools' and schools across Australia.

The growth in student achievement in NAPLAN results in the 13 Victorian Government primary schools who offer the PYP was investigated using student cohorts who had taken the Year 3 NAPLAN tests and then 2 years later took the Year 5 NAPLAN tests. Three sets of data from the years 2010-12, 2009-11 and 2008-10 were available for analysis (see Appendixes 4-6). Although not all of the schools were authorised PYP schools in 2008, those who were not authorised were PYP candidates and thus immersed in PYP implementation (see Table 3).

NAPLAN test results are reported both as direct scores and in bands or levels. According to ACARA (2011, Assessment Scales),

Each of the NAPLAN assessment scales describes the development of student achievement from Year 3 through to Year 9 along a ten-band scale. By locating all student results on a single scale that describes their performance and skills, the NAPLAN scales provide significant information about the performance of students.

The NAPLAN scales are constructed so that any given score represents the same level of achievement over time. For example, a score of 700 in Reading will have the same meaning in 2012 as in 2010. This enables changes in literacy and numeracy achievements to be monitored over time.

The use of a common scale that spans Years 3, 5, 7 and 9 allows both the status of, and gain in, individual student achievement to be monitored and reported throughout each student's years of schooling. A key feature of the national scales is that they also enable the achievement of all students to be monitored. It is possible to gauge the achievement of the most able group of students and, at the same time, to pay attention to the group of students who have yet to reach the agreed national minimum standard.

In addition (ACARA, 2011, How to interpret),

For NAPLAN results, a 'National Minimum Standard' is defined and located on the assessment scale for each year level. Band 2 is the minimum standard for Year 3, Band 4 is the minimum standard for Year 5, Band 5 is the minimum standard for Year 7 and Band 6 is the minimum standard for Year 9. These standards represent increasingly challenging skills and require increasingly higher scores on the NAPLAN scale.

These features of the NAPLAN scores and scales mean that the results can be used in this study to measure cohort progress in each of the schools and to compare PYP Victorian Government schools' performance with 'Like schools' and 'Australian schools'.

The NAPLAN data from the thirteen PYP Victoria Government schools were analysed by determining the effect size of student achievement for each school and comparing growth in achievement with students from 'Like schools' and 'Australian schools'. The analysis focuses primarily on the data for Reading and Numeracy and excludes Writing, as test changes have meant that the results for Writing cannot be compared over time (see Appendices D, E and F for full NAPLAN tests results)⁴.

Comparison with 'Like schools' and Australian schools

On the *MySchool* website, similar ('Like') schools are schools serving students from statistically comparable backgrounds. Factors used to determine a group of similar schools are the socio-educational backgrounds of the students' parents, whether the school is remote (based on the ARIA Remoteness index⁵), the proportion of Indigenous students, the proportion of students from a language background other than English, or a combination of these factors. These factors are used to create an Index of Community Socio-Educational Advantage (ICSEA)⁶ value for each school. In addition to providing 'Like' school data, average results for all Australian schools are also given on the website.

The individual school data from the *MySchool* website has enabled this study to compare PYP Victorian Government Schools with results from similar schools and with national results.

Effect size

The effect size is a way of quantifying the size of the difference between two groups and can be used as a measure of growth in student achievement. Cohen's *d* was used and is defined as the difference between two means divided by a standard deviation for the data. According to Cohen, an effect size of 0.2 to 0.3 might be a "small" effect, around 0.5 a "medium" effect and 0.8 to infinity, a "large" effect (Cohen, 1992). For educational research, Hattie (2012), who analysed a large number of interventions in schools, determined that an effect size of 0.4 is a 'hinge point' (or 'natural' growth) for student moving from one year to the next. In this study effect sizes greater than 0.4 were noteworthy.

Discussion of results

In the findings sections of this report the NAPLAN data is presented in a number of ways and includes: individual IB PYP school performance on the 2012 Year 3 and Year 5 reading and numeracy NAPLAN tests; performance of students at IB schools on Year 3 and 5 reading and numeracy tests compared to Like schools and Australian schools; and student achievement as measured by effect

⁴ The research team did not have access to individual student NAPLAN results but instead used descriptive statistics provided on the My School website and this limited the analysis that could be conducted.

⁵ ARIA is an unambiguously geographical approach to defining remoteness which is used nationally.

⁶ The Index of Community Socio-Educational Advantage (ICSEA) is a measure that enables meaningful comparisons to be made across schools. It has been developed specifically for the *My School* website and measures key factors that correlate with educational outcomes. ICSEA uses Australian Bureau of Statistics (ABS) and school data to create an index that best predicts performance on NAPLAN tests. The variables that make up ICSEA include socioeconomic characteristics of the small areas where students live (in this case an ABS census collection district of about 200 houses), as well as whether a school is in a regional or remote area, and the proportion of Aboriginal students enrolled at the school. School ICSEA values are constructed from SES data obtained by matching enrolled student addresses to the census collection districts (CCD) in which they are located, and then allocating the census district values to the addresses (see MySchool, 2014).

size for 3 student cohorts (in the years 2010-12, 2009-11 and 2008-10) on the Reading and Numeracy NAPLAN tests compared with Like schools and Australian schools.

4.2 DEECD surveys

Each year the Department of Education and Early Childhood Development conducts annual surveys of the opinions of teachers and parents and the attitudes to school of students in each Government school.

As this study administered its own surveys of teachers and students to provide insight into a range of aspects of the impact of the implementation of the PYP on student outcomes, pedagogical practices and school culture and climate the only DEECD survey included in this analysis was the Parent Opinion Survey as this provided an insight into parents' perceptions of the case study schools.

The DEECD Parent Opinion Survey seeks responses from a sample of parents in each school to Likert scaled items (strongly agree – strongly disagree) regarding three main aspects of their child's school: school climate, student behavior and student engagement. Within each of these constructs there are subcategories as follows:

School climate: *school improvement, approachability, teacher morale, parent input, stimulating learning, behavior management, reporting, learning focus, transitions, extra-curricula, homework and general satisfaction*

Student behavior: *student safety and classroom behavior*

Student engagement: *connectedness to peers, student motivation, social skills and school connectedness.*

The 2013 DEECD Parent Opinion Surveys from each of the case study schools were made available by the schools and the results from these surveys are discussed in Section 10.

4.3 RMIT surveys for principals, teachers and students

To complement and extend the NAPLAN results, the RMIT team developed a principal, teacher and student (Grades 5 and 6) survey to collect perceptions about the extent to which PYP is impacting on: student achievement; student motivation; perceptions of teacher effectiveness; school connectedness; teacher pedagogical beliefs and practices; teacher efficacy and engagement; and school culture and climate (see Appendixes A-C). All of the surveys asked a mixture of closed and open questions. Each of the surveys was made available online to facilitate access by participants and analysis of responses.

The principal and teacher surveys were designed to explore participants' opinions of student academic and non-academic outcomes, the impact of implementing the PYP on the school, what influenced schools to implement the PYP and the ways schools are responding to AusVELS.

The principal survey (see Appendix A) also asked for background information about the school population and number of classes at each level, when and who made the decision to apply for the PYP, the factors, goals and motives that influenced the school to implement the PYP, the extent to which the IB-PYP impacts on students' perception of teacher effectiveness, and any other unexpected outcomes associated with IB-PYP implementation. The teacher survey (see Appendix B) asked for information about when they started teaching the PYP, whether they were at the school when the PYP was introduced, the grade taught in 2013 and previous grades taught.

Both the principal (Appendix A) and teacher (Appendix B) surveys asked specific questions regarding the following, with alternate prompts for providing additional information depending on whether the survey completer responded with there being an impact or not:

- The level of impact the IB-PYP has had on students' academic achievement
- The extent to which the IB-PYP contributes to student development of Learner Profile attributes
- The extent to which the IB-PYP impacts on students' motivation
- The extent to which the IB-PYP impacts on students' school connectedness
- The extent to which the IB-PYP implementation impacts on teacher's approach to teaching (including practices)
- The extent to which the IB-PYP implementation has led to changes in teachers' collaboration within the school
- The extent to which the IB-PYP implementation has impacted on the way teachers work in the school
- The extent to which the IB-PYP implementation has affected teacher engagement in the school
- The extent to which the IB-PYP has contributed to a positive school culture
- The extent to which the IB-PYP has contributed to positive changes in school climate
- The extent to which the IB-PYP has led to changes in the way staff connect with the school community
- The extent to which the IB-PYP implementation has led to changes in leadership within the school (if at the school prior to the introduction of PYP)
- The ways the school is adapting the IB-PYP in response to AusVELS
- The role of the School Council and/or parents in the IB-PYP in the school
- The extent to which the anticipated benefits of the IB-PYP are being achieved (if at the school prior to the introduction of PYP)
- The problems/challenges facing the school as an IB-PYP school.

The teacher survey also asked questions regarding

- Whether the IB-PYP has impacted on students in other ways
- The aspects of teaching the IB-PYP that the teacher enjoyed.

The student survey (see Appendix C) comprised 25 Likert scale items (scored strongly agree – strongly disagree), with one open question that asked “What do you like most about what you learn in your grade?”. The Likert items related to the PYP approaches to inquiry learning, their teachers' pedagogical practices and the Learner Attributes together with their perceptions of the impact of the PYP on their learning experiences and the school environment. Consistent with the DEECD student attitudes to school survey, this survey was only provided to Grade 5 and 6 students as these have been found by DEECD to be the most reliable respondents. The validity of the surveys was determined using face and content validity. Experienced PYP teachers in schools not involved in this study reviewed each of the tests. The student survey was also pre-tested with a class of students to ensure questions were understood as intended. The surveys were also scrutinised by researchers in the Victorian Department of Education and Early Childhood Development as part of the process for gaining permission to undertake this research study in Victorian Government schools.

A large number of categorical questions were asked on the principal, staff and student surveys. Groups of like questions were combined and presented in the report as index scores. The main purpose of the indexes was to provide a way of simplifying and summarizing the data for the reader. The indexes were created by clustering questions that are related by a broad idea such as 'teacher impact' and 'learning opportunities'. For example, student surveys consisted of Likert items, which were 'scored' 1 to 5. Summing the related questions provide a scale that is a defensible approximation to an interval scale and can be subjected to statistical analysis. This scale was then converted into percentages for our index as this format is more easily understood⁷. An example is shown below. Student A's responses to the six questions on 'learning opportunities' is provided in Table 2 and the total of her responses is shown.

Table 2: Example of calculation of Index

'Learning opportunities' survey item	Student A's score
I enjoy what I learn in my PYP school.	3
I enjoy coming to school each day.	2
The learning technologies I use at my school help me with my learning.	4
I like the way my PYP school gives me opportunities to experience different things.	3
I feel I belong at my PYP school.	2
I like the way my PYP school gives me opportunities to share my learning	4
TOTAL (out of 30)	18

The school is the main focus for analysis and so the average of the student scores was determined. This was then converted into a percentage. For example, the average of the student scores for school XX was 27.3, which was converted into a percentage $27.3/30 \times 100 = 91$. This was our index for the school.

Cronbach's alpha was calculated from the ANOVAs of the relevant questions and used to determine the internal consistency of the staff and student indexes. All of the indexes had alpha scores greater than 0.65, which suggests good internal consistency. The sample size of principals (n=6) was too small to analyse although, as shown in the tables provided (see Sections 6 and 7), there is a consistent pattern of responses.

Five Victorian PYP schools that agreed to participate in the survey component of the study completed the three sets of RMIT surveys.

4.4 Case studies

To provide a rich and in depth picture of the implementation and impact of the PYP in Victorian Government schools three school case studies were completed.

⁷ Although the index is a percentage (i.e. out of 100) the tables giving the index results do not use the % sign as it could be confusing with the percentages of schools used in other tables. Instead, the heading in the tables with index results are shown as Index (/100)

At the three case study sites there were Individual and/or group interviews with teachers, senior administrators and parents, and other appropriate data sources were collected and analysed including a variety of documents such as school policies, school websites, circulars to parents, curriculum planning documents. These case studies provide insights into:

- The school(s), its history, organisational and governance structure, staff and student profile, and other relevant contextual details.
- Changes in teaching/pedagogical practices at the school(s), based on classroom observations, curriculum planning documents and interviews/focus groups involving school leadership and teachers.
- Changes to school climate and school culture as perceived by key groups including teachers, school leadership team and parents.

As discussed in Section 10, the three schools that were the focus of case studies included a small school (School B), a medium sized school (School A) and a large school (School E). The schools had been authorised as PYP schools at three different times and were situated in different types of local communities with a range of non-English speaking backgrounds (see Table 3).

5. Research participants

This section provides details of the location of the 13 PYP Victorian Government schools together with the schools population, when authorised as a PYP school, language background other than English, attendance rates and Index of Community Socio-Educational Advantage (ICSEA) data. It also provides details of response rates to the three surveys (principal, teacher, student) and some additional information about the survey respondents.

5.1 Background information on the schools

All 13 Victorian Government primary schools that are authorised to offer the PYP were invited to participate in the research study. As illustrated in Figure 2, most of the schools are in the southern and south-eastern suburbs of Melbourne.

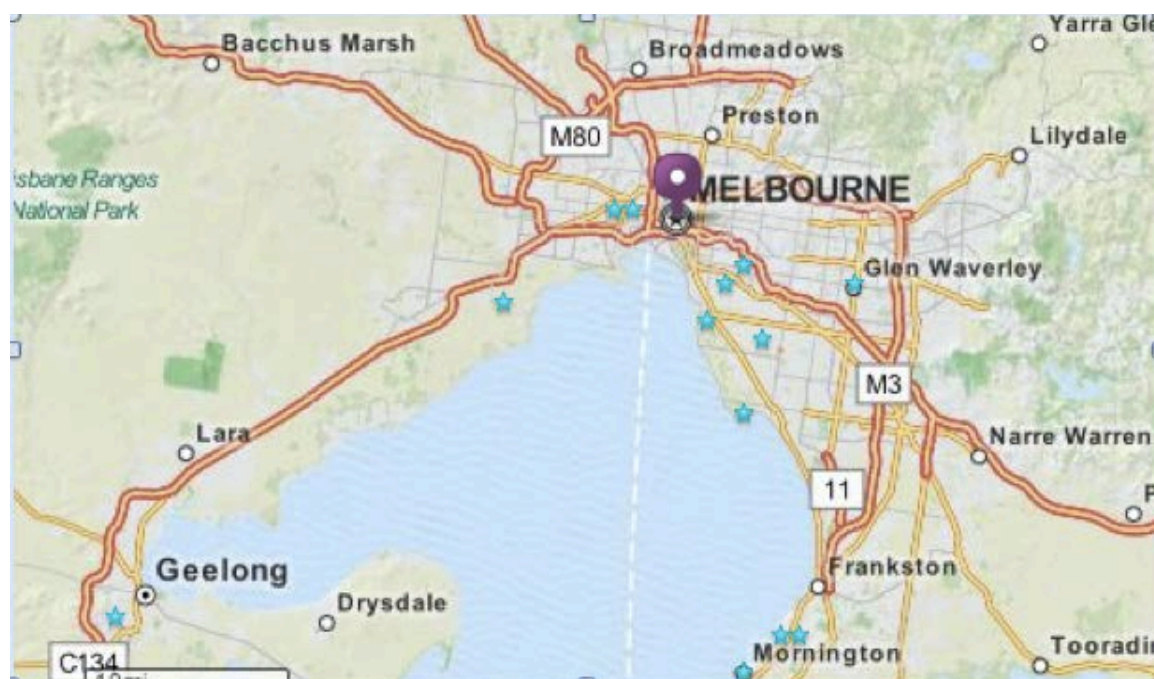


Figure 2. Location of the 13 Victorian Government Primary Schools offering the PYP (blue stars)

In addition,

- Most of the schools have enrolments between 500 and 800 students. There are 2 small schools (with enrolments between 250 and 300) and 2 large schools (with enrolments between 850 and 950) (2012).
- As is the case with most schools in Melbourne, the schools have few indigenous students (most 0%, max 3%).
- The schools have high Index of Community Socio-Educational Advantage (lowest is 1026, most 1100+) and good attendance rate (93+%).
- Students' language background other than English ranges from 2% to 76%, with the average being 28%.

Further publically available information about each of Victoria's 13 IB PYP schools can be found in Table 3.

Table 3: Victorian Government Primary PYP Schools

School name	When authorised as PYP school	School PYP candidacy	Number of students (2012)	Indigenous students	Language background other than English	Student attendance rate	Index of Community Socio-Educational Advantage (2012)
School A	6.12.2006 Also CIS accredited	23.09.2005	753	0%	26%	95%	1174 (73% top quarter)
School B	15.04.2009	13.12.2005	255	1%	13%	95%	1101 (53% top quarter)
School C	29.11.2011	24.04.2009	465	0%	7%	94%	1119 (36% top quarter)
School D	12.04.2012	1.01.2008	949	0%	76%	95%	1171 (67% top quarter)
School E	15.11.2011	11.05.2006	856	1%	43%	93%	1053 (37% top quarter)
School F	14.12.2010	5.12.2006	617	0%	15%	96%	1152 (57% top quarter)
School G	14.05.2008 Also CIS accredited	5.06.2006	761	0%	2%	95%	1026 (18% top quarter)
School H	17.12.2010	22.09.2008	593	0%	39%	96%	1111 (42% top quarter)
School I	27.10.2009	11.05.2006	263	3%	57%	93%	1076 (45% top quarter)
School J	09.09.2009	11.05.2006	555	1%	17%	95%	1107 (40% top quarter)
School K	19.11.2007	23.08.2005	526	0%	18%	94%	1178 (67% top quarter)
School L	21.12.2011	24.10.2008	786	0%	42%	95%	1180 (48% top quarter)
School M	10.04.2007	21.06.2010	583	1%	11%	94%	1120 (50% top quarter)

NB The above data was sourced from the *My School* website, apart from the PYP authorisation dates which are indicated on the IBO website

In total, five schools agreed to participate in the study and completed the three RMIT surveys (principal, teachers, Grade 5 and 6 student questionnaires). A number of non-participating schools indicated that competing commitments such as PYP authorisation reviews prevented them from joining the study. Among schools that did agree to be part of the study the level of teacher survey completion at two schools was quite low (see Table 4) which could affect the representativeness of the results from these schools.

Table 4: Number of responses to the RMIT surveys from each participating school

Schools	No of principal surveys completed	Principals' response rate	No of teacher surveys completed	Teachers' response rate	No of student surveys completed	Students' response rate
School A	1	100%	25	47.2%	80 (Grades 5 and 6)	53.3%
School B	1	100%	10	58.8%	45 (Grades 5 and 6)	60.0%
School C	1	100%	2	7.1%	78 (Grades 5 and 6)	78.0%
School D	2*	100%	35	51.5%	268 (Grades 5 and 6)	89.3%
School E	1	100%	2	3.5%	94 (Grade 5 only)	53.7%
TOTAL	6		74	-	565	

* An assistant principal also completed the survey

5.2 Principals

Of the six principals who completed the Principal survey, only two (Schools C and E) had been a staff member at the time when the PYP was implemented (see Table 5). From the case study interviews, those who joined the schools after the implementation of the PYP had chosen the school because of it offering the PYP.

Table 5: When principals started at their school

School	When principal started at the school
School A	2010
School B	2009
School C	2008
School D	2010
School E	1997

5.3 Teachers

The 74 teachers who completed the surveys had a range of years of experience in teaching the PYP (see Table 6), with nearly a quarter having taught within the PYP for two years, and more than half having between three and five years PYP teaching experience. Most of the teachers (70.7%) were not at their current school prior to the introduction of the PYP.

Table 6: When participating school staff started teaching PYP

Starting Year	Frequency	Percentage
2000	1	1.4
2004	2	2.7
2005	4	5.4
2006	3	4.1
2007	6	8.1
2008	12	16.2
2009	10	13.5
2010	13	17.6
2011	5	6.8
2012	7	9.5
2013	11	14.9
TOTAL	74	100

As can be seen in Table 7, the sample of teachers who completed questionnaires were teaching across the grade levels in 2013, and at three of the schools (Schools A, B and D) there was a good representation across all grades taught in the school. Please note that two of the schools (Schools B and C) had composite grades (1/2, 3/4, 5/6) and three of the schools had stand-alone grades (Schools A, D and E).

Table 7: Grade level being taught by respondent teachers in 2013

Grade level	Frequency School A	Frequency School B	Frequency School C	Frequency School D	Frequency School E
Foundation		2		4	
Foundation/Grade 1				1	
Grade 1	5			2	
Grade 1/2		2			
Grade 2	6			5	
Grade 3	5			5	
Grade 3/4		3			

Grade 4	3			5	1
Grade 5	2			5	
Grade 5/6		2	2		
Grade 6				4	
Across all grade levels	4	1		4	
No response					1

5.4 Students

Survey responses were received from 567 students:

- 46.6% of these were from boys and 46.2% were from girls, the remaining 7.1% of responses did not gender identify.
- 60.1% of responses were from students in Grade 5, and 39.0% from students in Grade 6, the remaining 0.9% of responses did not identify their grade.
- Most (64.2%) of the students started at the school in the Prep/Foundation year, the remainder entered across the grade levels (see Table 8).

Table 8: Grade level when students commenced at the school

Starting level	Frequency	Percentage
Prep/Foundation	364	64.2
Grade 1	25	4.4
Grade2	46	8.1
Grade 3	39	6.9
Grade 4	32	5.6
Grade 5	45	7.9
Grade 6	15	2.6
unspecified	1	0.2
TOTAL	567	100.0

5.5 Summary

In summary, three different data sources were analysed for the study, these included:

- Secondary analysis of publically available NAPLAN data for 13 Victorian Government PYP schools
- Questionnaires completed by principals, teachers and students at 5 Victorian Government PYP schools
- Case studies undertaken at 3 Victorian Government PYP schools, including secondary analysis of data provided by the schools (such as the DEECD Parent Opinion Survey).

6. The impact of the PYP on student outcomes

In the remaining sections of this report the study findings are presented and discussed. This first section focuses on the impact of the PYP on student outcomes and addresses three key questions:

- In what ways does the PYP impact on student academic achievement?
- In what ways does the PYP implementation contribute to student development of Learner Profile attributes?
- To what extent does the PYP impact on students in other ways?

Subsequent sections focus upon the research questions related to the impact on schools; the goals, motivations and factors that influenced the schools to implement PYP; how the schools are adapting PYP to AusVELS; and the case studies.

The impact of the PYP on student outcomes was assessed through an analysis of the NAPLAN results for all 13 PYP Victorian Government schools as well as through surveys of principals, teachers and students at the five participating schools. The NAPLAN results provided an indication of student performance on national testing and enabled comparison with Like schools and all Australian schools (Section 6.1).

The principal and teacher surveys sought the perceptions of the respondents in the five participating schools on the impact of the PYP on their students'

- academic achievement
- development of Learner Profile attributes
- student motivation
- perceptions of teacher effectiveness, and
- school connectedness.

The findings from these questionnaires are discussed in Sections 6.2 and 6.3.

In addition, students' in Grades 5 and 6 at the five participating schools were asked their perceptions of their

- school connectedness
- teacher's impact on their learning
- learning opportunities, and
- what they liked most about what they learned in their grade.

These findings from the student survey are discussed in Section 6.4.

6.1 Results from NAPLAN

The impact of the PYP on student academic outcomes was measured for all 13 Victorian Government primary schools through their NAPLAN results. Although, as one participating principal commented, "There is much more to the academic impact on students than their responses to external testing", the NAPLAN results nonetheless provided access to a standardised data set for all PYP Victorian Government schools, as well as provide the basis for comparing the schools with demographically similar schools and also with national student results.

As noted previously, the data is presented in a number of ways – individual school performance of each of the 13 Victorian Government IB PYP schools on the 2012 Year 5 reading and numeracy NAPLAN tests, performance of students at IB schools on Year 3 and 5 reading and numeracy tests

compared to Like schools and Australian schools, student achievement as measured by effect size for 3 student cohorts (2008-2010, 2009-2011, 2010-2012) on four NAPLAN tests compared with Like schools and Australian schools.

Individual school performance in 2012

The average student scores on the Year 3 and Year 5 Reading and Numeracy tests for 2012 at the 13 IB schools are shown in Figures 3,4, 5 and 6 ⁸. The average for Australian schools is also shown.

The graphs indicate that in 2012:

- Year 3 students at all 13 schools, on average, achieved higher scores than students at all Australian schools in reading.
- Year 3 students at all 13 schools, on average, achieved higher levels than students at all Australian schools in numeracy.
- Year 5 students at all 13 schools, on average, achieved higher scores than students at all Australian schools in reading.
- Year 5 students at all but one school achieved higher levels than students at all Australian schools in numeracy.

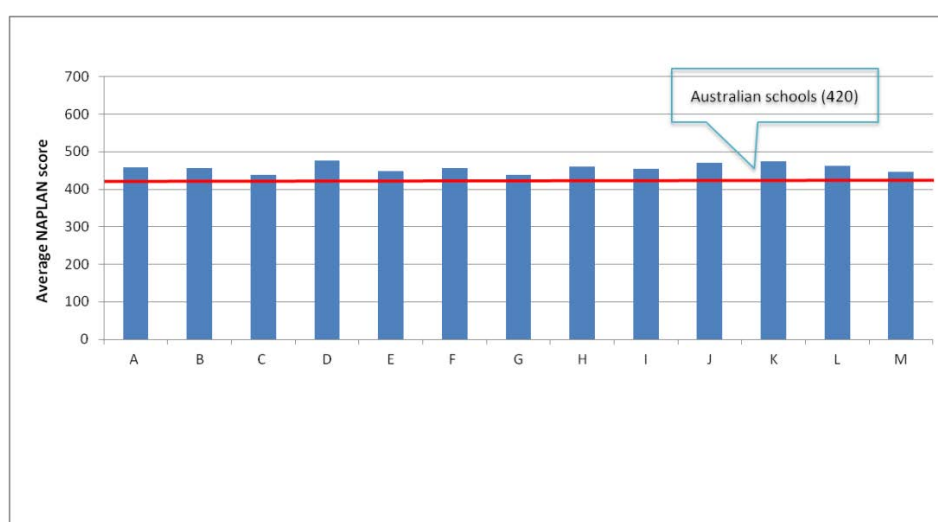
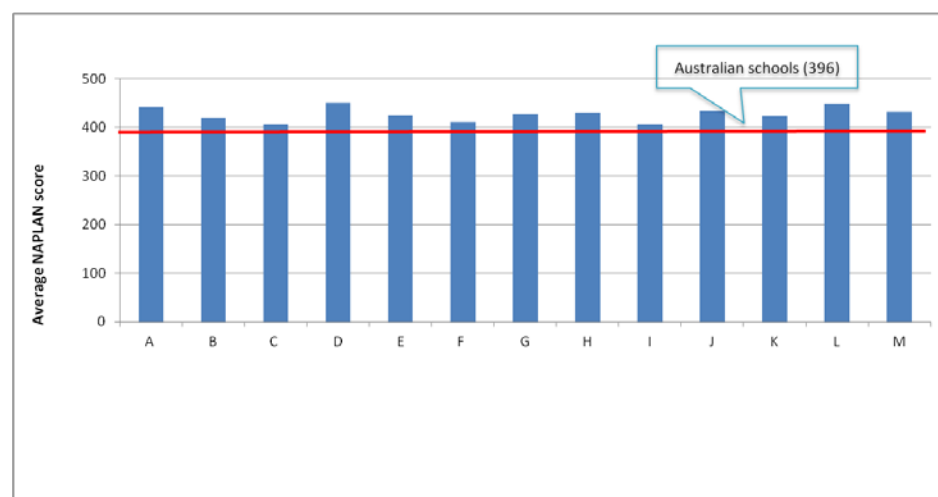


Figure 3. Average Year 3 NAPLAN scores for reading at the 13 PYP schools, 2012



⁸ The letters that appear in Figure 3,4,5 and 6 correspond with the schools listed in Table 2.

Figure 4. Average Year 3 NAPLAN scores for numeracy at the 13 PYP schools, 2012

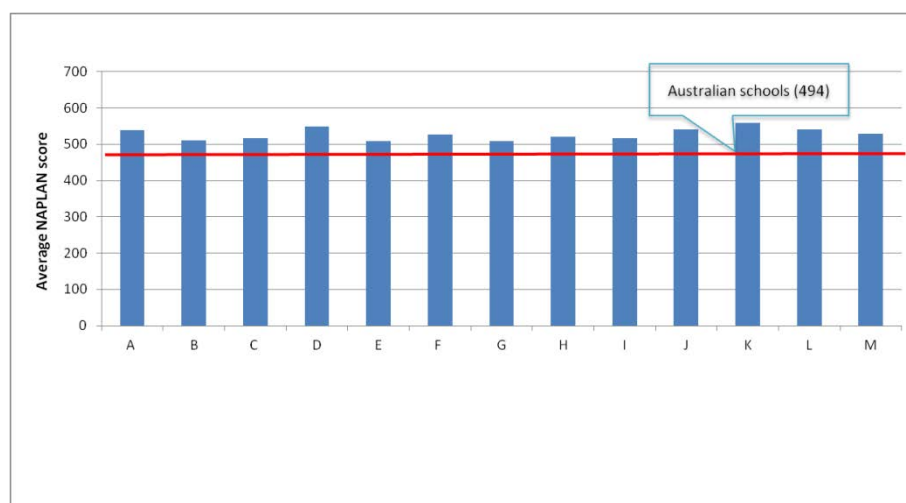


Figure 5. Average Year 5 NAPLAN scores for reading at the 13 PYP schools, 2012

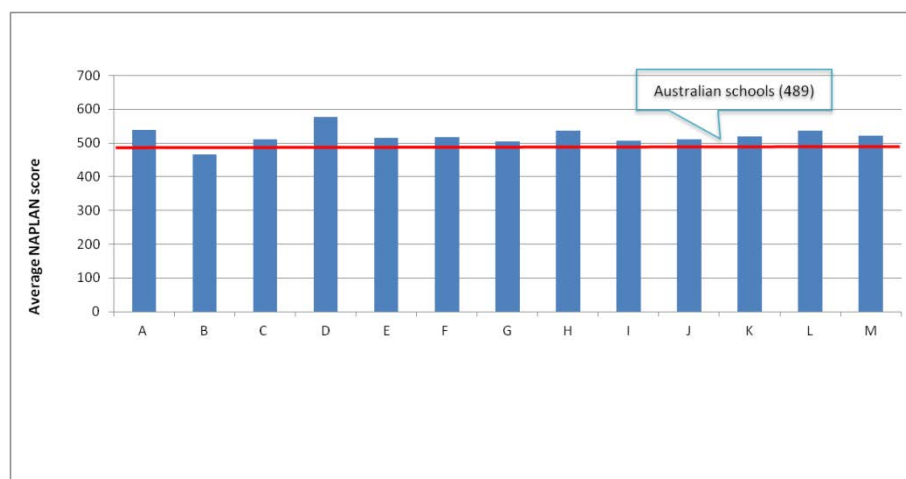


Figure 6. Average Year 5 NAPLAN scores for numeracy at the 13 PYP schools, 2012

Student achievement in reading and numeracy at Years 3 and 5 across all schools

In order to show the progress of a cohort of students a comparison of the achievement of students on the NAPLAN reading and numeracy tests at Year 3 (2008 to 2010) and Year 5 (2010-12) attending IB PYP schools with Like schools and all Australian schools was undertaken⁹. This shows that:

- PYP students achieved higher levels, on average, on both the reading and numeracy NAPLAN tests than the student results for all Australian schools and Like schools at year 3 (Figures 7 and 9);
- PYP students achieved higher levels, on average than the student results for all Australian schools and Like schools at Year 5 although the differences between IB student grade 3 and

⁹ That is, each cohort is students in Year 3 in 2008 and Year 5 in 2010, students in Year 3 in 2009 and in Year 5 in 2011, students in Year 3 in 2010 and in Year 5 in 2012.

grade 5 results, and those for Like schools and Australian school results, narrowed over the 2 years (Figures 8 and 10).

The results at Year 3 could be interpreted as showing the strength of the Prep-3 programs at PYP schools in reading and numeracy.

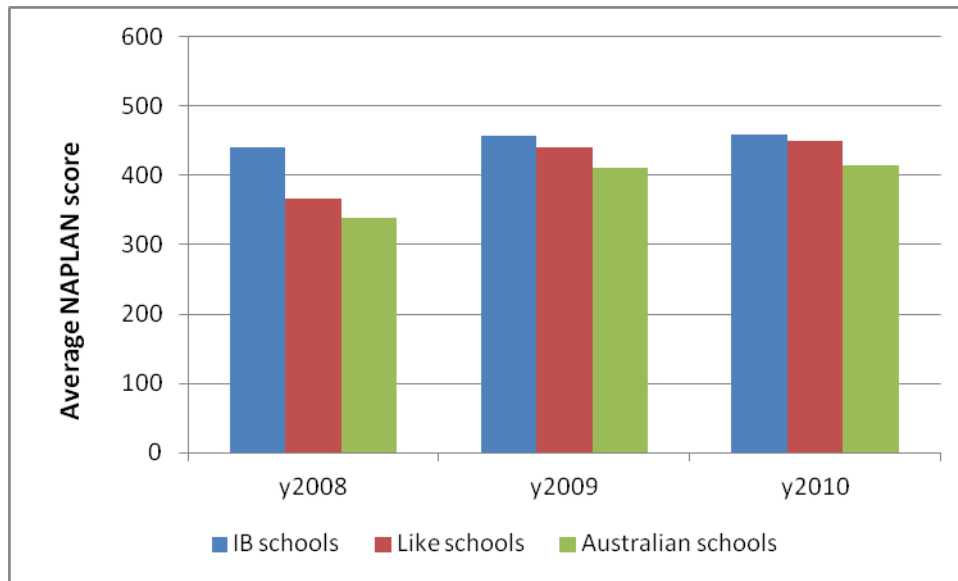


Figure 7. Average Year 3 Reading NAPLAN scores for 2008, 2009 & 2010

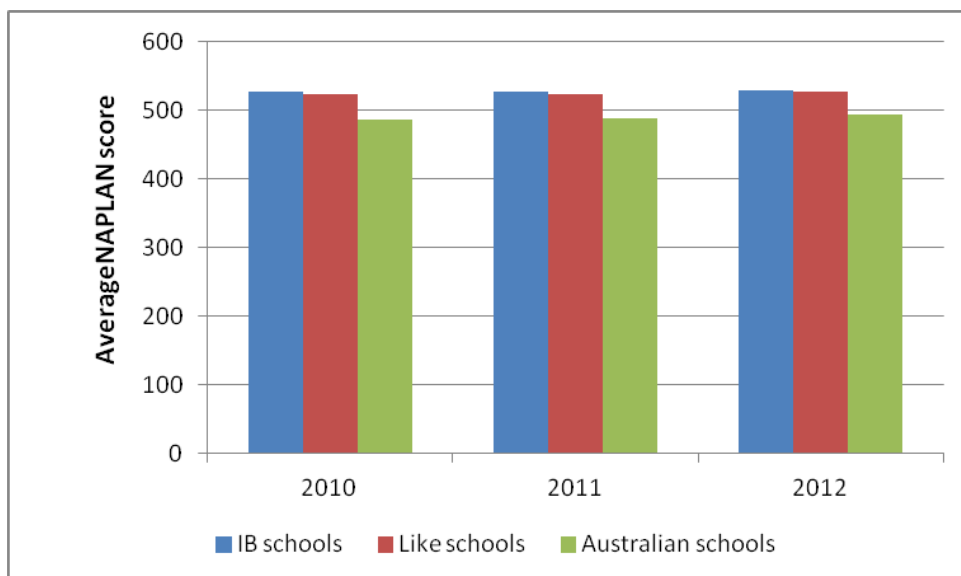


Figure 8. Average student results on Year 5 NAPLAN Reading for 2010, 2011 and 2012

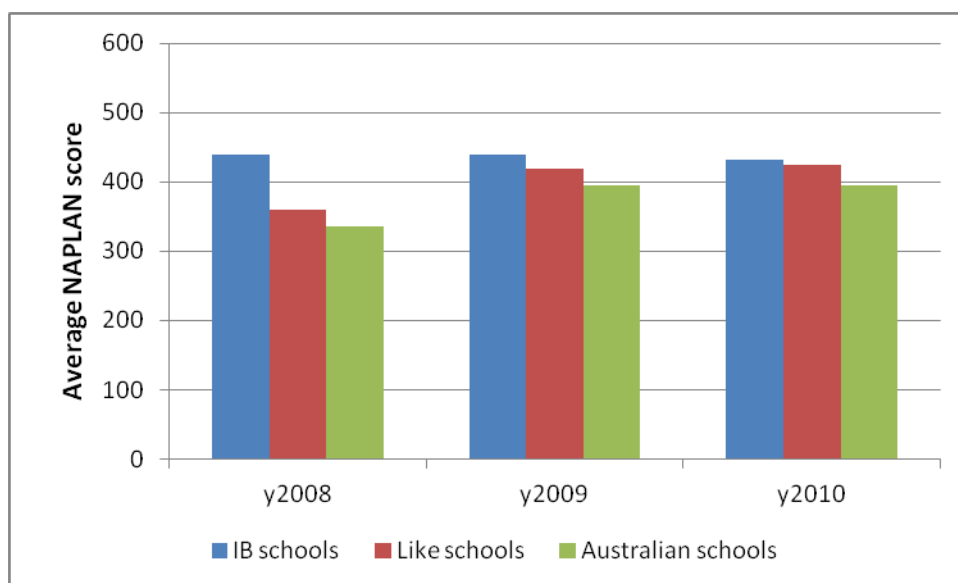


Figure 9. Average Year 3 Numeracy NAPLAN scores for 2008, 2009 & 2010

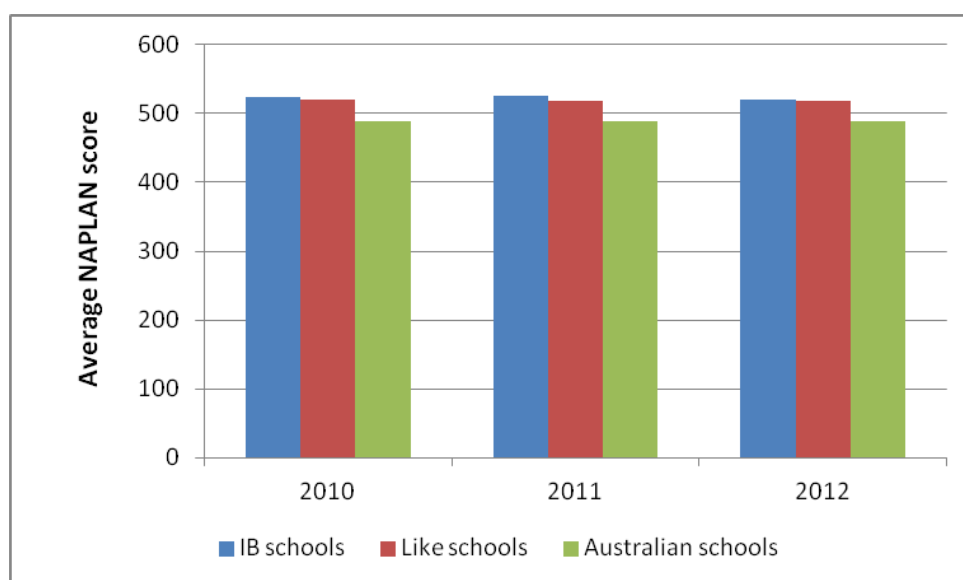


Figure 10. Average student results on Year 5 NAPLAN Numeracy for 2010, 2011 and 2012

Growth in student achievement as measured by effect size

As noted in the previous section, in order to show the progress of a cohort of students a comparison of the achievement of students on the NAPLAN reading and numeracy tests at Year 3 (2008 to 2010) and Year 5 (2010-12) attending IB PYP schools with Like schools and all Australian schools was undertaken¹⁰, and this was investigated using effect size.

Effect size can be used to understand learning gains achieved by a group of students or multiple groups of students over time. It is expected that over a year period the 'natural' growth should be

¹⁰ That is, each cohort is students in Year 3 in 2008 and Year 5 in 2010, students in Year 3 in 2009 and in Year 5 in 2011, students in Year 3 in 2010 and in Year 5 in 2012.

around 0.4. With this in mind an effect size above 0.4 is seen as reflecting a positive intervention in student learning.

In Figure 11 the average effect size (standardised to one year) for three student cohorts at IB schools who took the four NAPLAN tests in year 3 and then again 2 years later in year 5 are displayed and compared with the results for Like and Australian schools on the same tests over the same periods.

The effect sizes for the three student cohorts on all four tests are above the ‘natural’ growth of 0.4.

Although, as discussed in the next section, the effect size for student achievement in numeracy at Like schools and Australian schools show stronger growth.

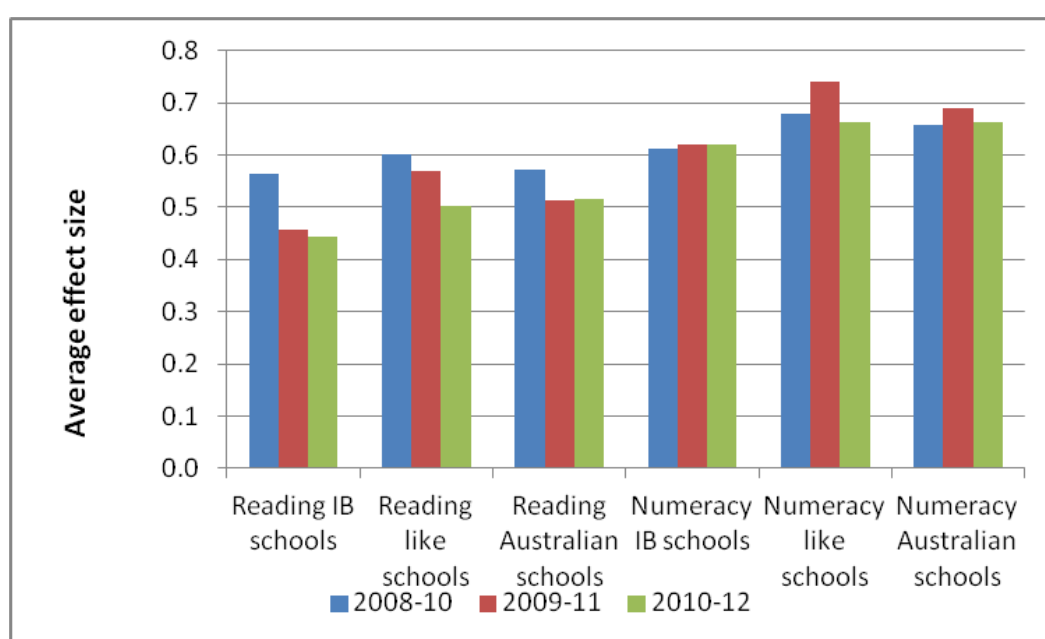


Figure 11. The effect size of the difference in student achievement from year 3 to year 5, between IB PYP, Like and Australian schools on the two NAPLAN tests for the three student cohorts 2008-10, 2009-11 and 2010-12

Comparing the growth in achievement with Like schools

As shown in Figure 12 the students at IB PYP schools have a slightly weaker growth in their achievement as measured by effect size when compared to students at Like schools. Consequently, although students at IB schools are performing better than students at Like schools on the NAPLAN tests in Year 3 by Year 5, the Like schools have greater achievement growth. A possible explanation of this result is a statistical phenomenon known as ‘regression to the mean’¹¹, which is explained in footnote 11. It should also be noted that in Figure 12 the results for the 2009-2011 have been distorted by the poor performance of two schools (Schools E and G) on the 2011 NAPLAN tests¹².

¹¹ This phenomenon occurs when a variable (in this case student achievement) is high on its first measurement; it will tend to be closer to the average (of all students) on its second measurement. In the case of the PYP schools, their results were high in Year 3 and tended to be closer to the average in Year 5.

¹² School E had a relatively small increase in the students’ reading and numeracy scores in the period and School G had comparatively low reading and numeracy scores in both years (see Appendix E).

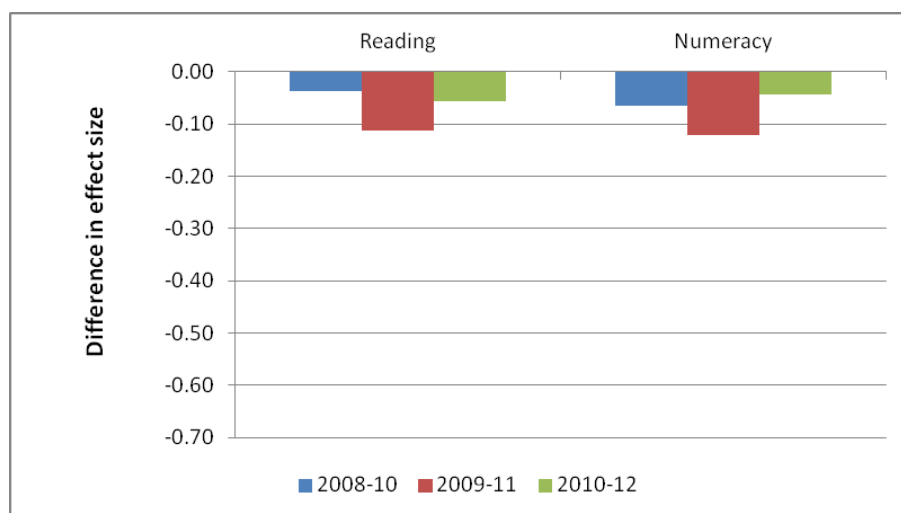


Figure 12. The difference in effect size of student achievement at IB PYP schools when compared to Like schools on the four NAPLAN tests for the three student cohorts 2008-10, 2009-11 and 2010-12

Comparing the growth in achievement with Australian schools

On average students at the IB schools in the three cohorts performed better than students at all Australian schools on the NAPLAN tests in Year 3 and Year 5. As shown in Figure 13, however, all of the IB PYP student cohorts again have a weaker growth in their achievement as measured by effect size when compared to all Australian students.

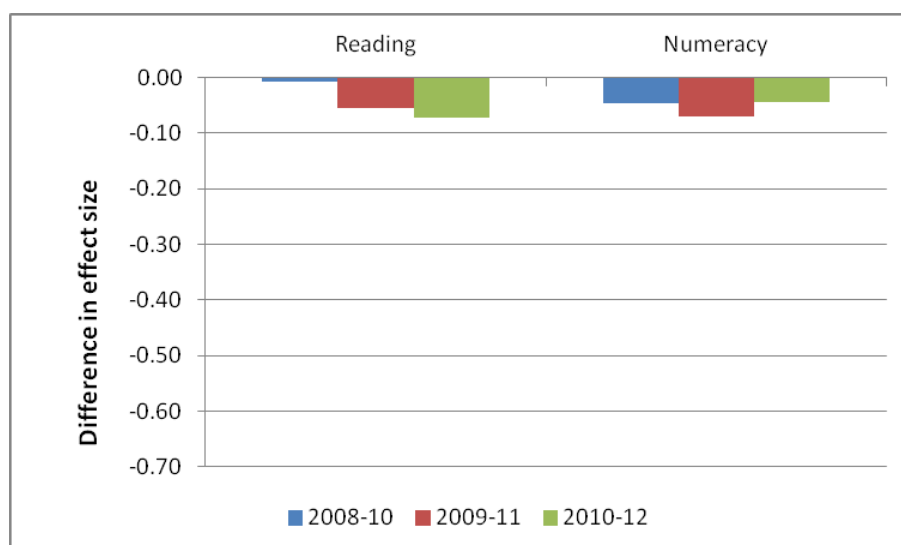


Figure 13. The difference in effect size of student achievement at IB schools when compared to Australian schools on the four NAPLAN tests for the three student cohorts 2008-10, 2009-11 and 2010-12

Summary

The analysis of the NAPLAN data can be summarised as follows:

- In 2012, on the year 3 reading and numeracy tests, students at all 13 PYP Government primary schools achieved higher scores than the Australian average.

- In 2012, on the year 5 reading and numeracy tests, students at all 13 PYP Government primary schools achieved higher scores than the Australian average, except for one school on numeracy.
- In the years 2008, 2009 and 2010 PYP students achieved higher levels, on average, on the Year 3 reading and numeracy NAPLAN tests than the students from Like schools and Australian schools. This could be interpreted as showing the strength of the Prep – Year 3 programs in the PYP Government primary schools in reading and numeracy.
- This advantage was maintained by each of the three student cohorts two years later on the Year 5 tests, although the differences had reduced.
- Effect size is a useful measure of growth in student achievement. The average effect size (standardised to one year) for the three student cohorts at the PYP Government primary schools who took the four NAPLAN tests in year 3 and then again 2 years later in year 5 were above the ‘natural’ growth of 0.4.
- The effect size for numeracy of the three PYP student cohorts indicates strong growth in achievement over a two year period. This is tempered by the results from Like schools and Australian schools which show similar or even stronger growth. A potential explanation for this result is that either there has been an overall improvement in the numeracy achievement of Australian students in general or a reliability problem with the NAPLAN numeracy test¹³.
- The students at PYP Government schools, for the cohorts 2008-2010, 2009-2011 and 2010-2012, are achieving higher levels in both reading and numeracy when compared to Like and Australian schools at both Years 3 and 5. The effect size measurements, however, show that the growth in achievement of IB students is slower than the growth of the other cohorts. In part this can be expected due to the statistical phenomenon known as ‘regression to the mean’.

¹³ see discussion in Section 4.1 regarding critiques of the reliability of NAPLAN test results.

6.2 Principals' perceptions of the impact of PYP on student outcomes

A major focus of this study is the impact of the implementation of the PYP on student outcomes in the 13 PYP Victorian Government schools. As discussed in Section 4, this focus was addressed through a number of different data sources. This section reports on the perceptions of the principals, in five of the schools, of the impact of the PYP on student outcomes as reflected in their responses to relevant questions in the principal survey (see Appendix A).

The principals' survey asked a number of open and closed questions related to the impact of the PYP on student learning opportunities. Using the accumulated score method discussed in Section 4.3, an index related to student learning opportunities was created from a selection of the closed questions (See Table 9). The questions that related to this index¹⁴ were:

- Qu 9A. What level of impact has the IB-PYP had on your students' academic achievement?
- Qu 10. To what extent does the IB-PYP contribute to student development of Learner Profile attributes?
- Qu 10A. To what extent does the IB-PYP impact on students' motivation?
- Qu 12B. To what extent does the IB-PYP impact on students' perception of teacher effectiveness?
- Qu 9B. To what extent does the IB-PYP impact on students' school connectedness?

The open questions provided an opportunity for the principals to express their views of the impact of PYP on student outcomes.

Table 9: Index for principals' perceptions of student learning opportunities

Schools	No.	Index (/100)	Standard Deviation	Standard Error
School A	1	66.7	0.00	0.00
School B	1	86.7	16.33	7.30
School C	1	73.3	24.94	11.16
School D	2	86.7	16.33	5.16
School E	1	100.0	0.00	0.00
Total	6	83.3	18.76	3.42

The overall rating of 83 (out of a possible 100) by principals indicates most¹⁵ believe that PYP has had a strong impact on student outcomes (Table 9). In the open-ended question responses the principals commented that the PYP had a noticeable academic impact on students who appeared to display a deeper understanding of concepts and achieved improved student outcomes in AusVELS. Moreover, the principals indicated that the PYP had improved student engagement and motivation, goal setting, capacity to transfer knowledge and their recognition and appreciation of cultural sensitivities. For example, one principal noted the PYP's impact on the academic achievement of the students: *"Our children demonstrate world knowledge. Past students report back on the benefits of preparation for their future learning. Our NAPLAN results could be indicative of the philosophy to learning. The dispositions in the PYP are demonstrated while at primary school and in future education. Student surveys provide positive feedback about the curriculum and approaches taken by the school"*.

¹⁴ Cronbach's alpha could not be used to determine the internal consistency of the principal indexes as the sample size was too small, although there is a strong consistency in the principals' response to the five questions.

¹⁵ The principal at School A tended to respond with a medium impact for these questions whereas the other principals tended to respond with a large impact.

Meanwhile, another principal described a range of PYP outcomes which included *“student questioning at higher level; improved depth of thinking; consistency in pedagogy & approach across school; collaborative planning introduced & now valued by all staff; learning engagements are differentiated and targeted at students; improved student achievement - particularly with the number of students achieving at and above the indicative VELS/AusVELS levels”*.

The principals also commented positively on the importance of the common (IB) language and framework provided by the Learner Profile attributes (Question 10A, see Appendix A). For example, one principal noted that, *“The program provides a whole school language and framework for learning and teaching... everything we do and say is related to the LP attributes - our reports, rewards and recognitions, newsletters, environmental print, units of inquiry - the language and behaviour is reflected throughout the school and into homes”*.

According to the principals’ responses to the survey (Question 11A, see Appendix A), the PYP had also motivated the students to want to find out more about the content of topics, develop their understanding of global perspectives and citizenship. For example, one principal commented that, *“The students are proud that they attend an IB World School. We have dedicated and committed students who value the role of education. PYP has provided with students with an understanding of global citizenship and that they are very likely to work in a number of locations in the world in the future. The children eagerly seek out more information and are keen to increase their knowledge, understanding and skills across a range of disciplines and of course in an interdisciplinary manner”*.

The principals also commented that the students valued their teachers more (Question 12A, see Appendix A) – seeing them as interesting and well informed, providing more challenging learning experiences. For example, *“Students tend to perceive teacher effectiveness in terms of knowledge of the PYP and their ability to implement it in the same way. They have been and are challenged when required to think about things differently. Our purpose in building this capacity in students is achieved by ensuring we employ widely with a particular focus on a demonstrated understanding of highly effective learning and teaching”*.

In terms of school connectedness (Question 13A, see Appendix A), the principals noted that students appeared to be proud of their school, feel part of a team, take responsibility for their own learning and learn in a collaborative way. For instance, one principal noted that *“students really ‘sell’ the school to the community and feel a part of a team”* and another commented that *“learning is more collaborative - more group work; shared interests through units of inquiry; greater opportunity for sharing and discussion; learning leads to action - student initiated so ownership of learning”*.

Other impacts on students noted by the principals in their survey responses to Question 14 (see Appendix A) include that students appeared to have a greater understanding of their place in the world, are outward looking students who acknowledge and respect difference, are confident in learning through reflection and they desire to find out more. For example, one principal noted that other impacts on the students in her school were that they were, *“Outward looking and an acknowledgement and appreciation of difference. Greater understanding of their place in the world and their potential impact. Desire to investigate, explore and seek more information when inquiring into new learning.”*.

6.3 Teachers' perceptions of the impact of PYP on student outcomes

This next section reports on the perceptions of teachers, in five of the schools, of the impact of the PYP on student outcomes as reflected in their responses to relevant questions in the teacher survey (see Appendix B).

The teacher survey asked the same set of questions as the principals' survey regarding the impact of the implementation of the PYP on student outcomes (except Item 12 regarding student perceptions of teacher effectiveness). As with the principal survey, several questions were grouped to form an index of teacher views of student learning¹⁶. The index was developed to summarise the data and to identify differences in the overall responses from schools. The items that related to this index were:

- Qu 7A. What level of impact has the IB-PYP had on your students' / academic achievement?
- Qu 8A. To what extent does the IB-PYP contribute to student development of Learner Profile attributes?
- Qu 9B. To what extent does the IB-PYP impact on students' motivation?
- Qu 10B. To what extent does the IB-PYP impact on students' school connectedness?

As can be seen in Table 10, there were high levels of support from the teachers that the IB has contributed to student learning. The overall average rating for the five schools was 85.7, with the lowest being School A (80.1), and the highest being School E (95.8). Both of these schools are further discussed in the case studies. It should be noted that only two teachers from each of School C and School E completed the teacher survey, and so these results should not be seen as necessarily reflecting the views of all staff at these schools. Questionnaires were completed by approximately half of the teaching staff at the other three participating schools (see Table 4). Similarities and differences between teacher responses in the five schools to each of the questions in the index are elaborated below.

Table 10: Index for teachers' views of student learning

Schools	No.	Index (/100)	Standard Deviation	Standard Error
School A	25	80.1	23.41	2.51
School B	10	93.9	12.86	2.24
School C	2	90.5	15.06	5.69
School D	35	86.5	19.19	1.66
School E	2	95.8	11.02	3.90
Total	74	85.7	20.33	1.24

Table 11 provides the teachers' responses to the question, "What level of impact has the PYP had on your students' academic achievement?" (Question 7, see Appendix B). Overall, 60.8% of responding teachers believed that the PYP had a large impact on students' academic achievement with the strongest responses at Schools B and D. Combined, 81% felt that the PYP had a large or medium impact. School A had a large number of new staff, and this could explain why several of the impact questions, including this one, received a "Don't know" response from teachers at this school.

¹⁶ The construction of the indexes for data analysis purposes is explained in Section 4.3. The internal consistency of this index was good as measured by Cronbach's alpha ($\alpha=0.68$)

Table 11: What level of impact has the PYP had on your students' academic achievement?

Schools	Don't know	Large impact	Medium impact	Small impact	No of responses
School A	28%	44%	20%	8%	25
School B	10%	70%	20%		10
School C	50%	50%			2
School D	2.9%	68.6%	22.9%	5.6%	35
School E		100%			2
Total	13.5%	60.8%	20.2%	5.4%	74

When asked to expand on their response to this survey question (see Appendix B, questions 7 and 7A) the teachers particularly commented on the impact of: inquiry based learning; student development of a global perspective; real life connections made by students; higher levels of student engagement and; that students took responsibility for their own learning. Their comments included:

I have found that the children have a greater understanding of the world and the PYP has enabled them to become global citizens. The connection between the classroom and the world are greater and I have found that there are a lot of authentic links and inquiries that are student driven.

A creative way to learn, opens students to higher level thinking, encourages reflection, the units of inquiry are very interesting

It has encouraged students to become inquirers and risk takers in their learning. It has also encouraged them to become more creative in their thinking and to think outside the square.

Table 12: To what extent does the PYP contribute to student development of Learner Profile attributes?

Schools	Large contribution	Medium contribution	Small contribution	No contribution	No of responses
School A	45.8%	50%	4.2%		24
School B	77.8%	22.2%			9
School C	50%	50%			2
School D	82.4%	17.6%			34
School E	100%				2
Total	69.0%	29.6%	1.4%	0%	71

The teachers also responded positively to the question “To what extent does the PYP contribute to student development of Learner Profile attributes?” (Question 8, see Appendix B), with 69 percent indicating they believed that the PYP makes a large contribution, and combined, 98.6% felt that the PYP made a large or medium contribution (see Table 12). In terms of the contribution PYP makes to the student development of Learner Profile attributes the teachers gave complementary examples to the principals. For example, they commented on the importance of the common (IB) language and framework afforded by the Learner Profile, and that the Learner Profile attributes provide a foundation and focus for all that is taught in the classroom. The following quotes illustrates the teacher perspectives:

The Learner Profile provides a common language that is spoken throughout the whole school enabling students to develop a deeper understanding than if different years of their schooling

were approached in different ways. It also offers a broader, richer focus than commercial programs eg. 'You Can Do It'.

Students explicitly think about their qualities as learners and incorporate these into their goals for their learning and development.

Classroom essential agreements are linked to the Learner Profile and is referred to on a daily basis. Our lines of inquiry, learning experiences and summative assessment tasks are all opportunities for students to develop and demonstrate the attitudes and attributes of the learner profile.

They support the units of inquiry, the central idea, the transdisciplinary themes and give the students shared language to discuss concepts and ideas.

Table 13: To what extent does the IB-PYP impact on students' motivation?

Schools	Don't know	Large impact	Medium impact	Small impact	No impact	No of responses
School A	8.3%	50%	33.3%	4.2%	4.2%	24
School B	11.1%	77.8%	11.1%			9
School C		100%				2
School D		57.6%	42.4%			33
School E		100%				2
Total	4.3%	60.0%	32.9%	1.4%	1.4%	70

When asked about the extent to which the PYP impacted on student motivation (Question 9, see Appendix B), 60% of the responding teachers believed that the PYP has a large impact on student motivation, and combined, 92.9% felt that the PYP had a large or medium impact (see Table 13). As examples of this impact, the teachers commented that the personalised and inquiry based learning of the PYP had increased student motivation, as had the programme's real world and global perspective:

(The) inquiry approach really engages the students, allowing for students to think deeper and focus on a specific area of interest. Student's learning is on major concepts that will stay with them for life, not just content. Children love working on their summative assessments.

Inquiry based learning allows students to steer their own inquiries and explore their interests within a transdisciplinary theme. This is very motivating for students learning.

Students have a say in what they want to learn and can take control of their learning. Students are given the opportunity to take action and use their learning in real life situations at a local and global level

The responding teachers were also positive about the impact of the PYP on students' connectedness with the school (Question 10, see Appendix B), with 45.7% of them believing that the PYP had a large impact on students' connectedness with the school, and 84.5% felt that the PYP had a large or medium impact (see Table 14). Examples of student connectedness cited by the teachers in their open-ended survey responses were that the students were more connected to others at home and in other classes, their learning was being connected with the school community and that they shared a consistent language for learning:

The PYP helps students connect to school by providing a common language between all staff,

students and parent communities. All units are based on concepts that directly link to student lives.

Students enjoy discussing their learning, in particular each unit of inquiry with their parents. Students enjoy coming to school. Students enjoy reflecting on their learning and school activities with parents, friends and teachers.

Our school is a Community. There is a lot of parental and community involvement. It is a small school ... so like one big family. The Learner Profile Attributes lead to a caring environment. The Preps have a Gr 6 buddy and regularly they see each other's work and learn together.

Table 14: To what extent does the IB-PYP impact on students' connectedness to the school?

Schools	Don't know	Large impact	Medium impact	Small impact	No impact	No of responses
School A	4.2%	41.6%	45.8%	4.2%	4.2%	24
School B	22.2%	66.7%	11.1%			9
School C		50.0%	50.0%			2
School D	3.1%	42.4%	42.4%	12.1%		33
School E		50.0%	50.0%			2
Total	5.7%	45.7%	40.0%	7.1%	1.4%	70

The teachers' other examples of the impact on students (see Appendix B, Question 11) were similar to those given by the principals and included that the students were outward looking and acknowledged and respected difference with an increased tolerance of others, that they had a greater understanding of their place in the world, they were inquisitive and strong in higher order thinking with a lifelong learner approach, and that they could apply their learning to any situation and in the future:

Children have an understanding of the structure of their education with particular patterns such as the profile, attitudes and transdisciplinary themes are consistent.

I think the expectation that we want the children to connect their learnings to self, community and globally has had a dramatic effect on learning.

They are sharing their learning at home more. I find that students are very keen to bring in materials that they think link in with the current (and previous) units of inquiry. They are discussing the unit with their parents and the parents often give us feed back when the student takes action. They are more aware of accepting differences in cultures and seem to have an antennae up when it links to a unit we have explored.

Students will often carry out their own inquiries at home to consolidate and extend their understandings of the central idea.

In summary, both the principals and teachers were strongly supportive of the PYP and clearly saw benefits for student learning in terms of students' academic achievement, development of Learner Profile attributes, motivation and school connectedness. Since becoming a PYP school the principals also believed that the students had a greater appreciation of their teachers.

6.4 Students' perceptions of the impact of PYP on their school experiences

This section reports student perceptions of the impact of the PYP as reflected in their responses to the student survey (see Appendix C) completed by students in the five participating schools (see Table 4). The student survey sought, among other items, Grade 5 and 6 students' views on the following three key areas,

- learning opportunities
- teacher's impact on their learning, and
- school connectedness.

The survey was comprised mainly of Likert scale items, with one open question that asked "What do you like most about what you learn in your grade?". Table 15 shows the student responses to items that were given in Question 5 of the survey (see: Appendix C), presented as the combined total responses for agree and strongly agree. The table also shows the range of responses from the schools in terms of the highest and lowest combined agree and strongly agree scores.

Table 15: Student responses to survey items – combined agree and strongly agree (%)

Statement	Combined agree and strongly agree (%)	Range % (lowest-highest)
The teacher and students listen to and respect what everyone says.	85.8	77.5 – 93.7 (School A-School D)
I enjoy studying things about other cultures.	84.8	76.3 – 89.2 (School A-School D)
The teachers encourage me to take responsibility for my own actions.	94.9	91.3 – 97.8 (School A-School B)
We can talk about our ideas without being put down.	83.6	69.2 – 89.7 (School E-School C)
We often work together in groups to complete tasks.	84.2	70.6 – 93.5 (School A-School C)
I can tell others about what I know in another language.	51.0	31.1 – 55.8 (School B-School E)
The teacher helps us work out ways of solving issues or problems.	93.8	87.3 – 96.3 (School E-School A)
The things we do in class encourage us to think and ask questions.	90.1	82.2 – 93.6 (School A-School C)
We often link our learning to current events such as those reported in the media.	72.4	52.6 – 80.2 (School A-School D)
We study things which are interesting and relevant to me.	81.0	68.9 – 87.2 (School E-School C)
I am interested and involved in my own learning.	92.8	88.4 – 95.6 (School E-School D)
The teacher helps us to think about how well we understand things.	91.0	90.1 – 93.5 (School A-School C)
The teacher gives me feedback and comments that help improve my learning.	92.7	90.6 – 94.9 (School E-School A)
Students have some say in what is studied and discussed.	79.4	72.8 – 84.7 (School B-School C)
The teacher encourages me to be creative.	90.9	86.9 – 93.3 (School E-School D)
The teacher gives me work that requires me to	88.5	81.3 – 90.7

research new ideas.		(School A-School D)
Our teacher understands and gets on well with the students in our class.	90.9	84.4 – 94.5 (School B-School D)
The teacher helps me succeed and appreciates the work I do.	90.8	77.8 – 95.9 (School B-School D)
Our teacher gives different types of work to different students.	79.9	71.3 – 92.6 (School A-School E)
I enjoy what I learn in my PYP school.	87.3	79.8 – 92.1 (School E-School D)
I enjoy coming to school each day.	84.1	71.1 – 90.3 (School B-School D)
The learning technologies I use at my school help me with my learning.	87.8	83.8 – 93.7 (School A-School D)
I like the way my PYP school gives me opportunities to experience different things.	90.8	81.3 – 94.4 (School A-School D)
I feel I belong at my PYP school.	85.6	73.8 – 91.1 (School A-School C)
I like the way my PYP school gives me opportunities to share my learning with the other people in the school including students and families.	87.0	77.8 – 89.8 (School B-School D)

The students' responses were very positive on most items, with particularly high ratings on those related to the teacher's impact on their learning: "The teacher encourages me to take responsibility for my own actions" (94.9%), "The teacher helps us work out ways of solving issues or problems" (93.8%), "The teacher gives me feedback and comments that help improve my learning" (92.7%), "The teacher helps us to think about how well we understand things" (91.0%), "The teacher encourages me to be creative" (90.9%), "Our teacher understands and gets on well with the students in our class" (90.9%), "The teacher helps me succeed and appreciates the work I do" (90.8%), "The things we do in class encourage us to think and ask questions" (90.1%).

Students were similarly positive in the perceptive they held about their school: "I like the way my PYP school gives me opportunities to experience different things" (90.8%) and their engagement with their education: "I am interested and involved in my own learning" (92.8%).

However, students were not so confident about telling others about what they know in another language (average of 51% agreeing or strongly agreeing). The next lowest response (average of 72.4% agreeing or strongly agreeing) was for "We often link our learning to current events such as those reported in the media", with the rating brought down by the responses from School A (52.6%) and School E (64.2%).

Learning opportunities: student index

In order to summarise the student survey data, a number of items on the student survey were grouped to form an index on student's views of learning opportunities¹⁷. The items that related to this index were:

- I enjoy studying things about other cultures.
- We can talk about our ideas without being put down.

¹⁷ The construction of the indexes for data analysis purposes is explained in Section 4.3. The internal consistency of this index was good as measured by Cronbach's alpha ($\alpha=0.68$)

- We often work together in groups to complete tasks.
- I can tell others about what I know in another language.
- The things we do in class encourage us to think and ask questions.
- We often link our learning to current events such as those reported in the media.
- We study things which are interesting and relevant to me.
- I am interested and involved in my own learning.
- Students have some say in what is studied and discussed.

Table 16: Students' Index for learning opportunities

Schools	No. of responses	Index (/100)	Standard Deviation	Standard Error
School A	80	79.2	19.96	0.715
School B	45	81.9	17.41	0.834
School C	78	83.5	17.94	0.637
School D	268	85.0	16.10	0.308
School E	94	80.4	20.63	0.669
Total	565	83.0	17.98	0.238

As can be seen in Table 16, the students were very positive about their learning opportunities at PYP schools, with School D students producing the highest index result of 85, School A returned the lowest result of 79, and the average result for the five schools was 83.

Teacher impact: student index

Ten items on the student survey were similarly grouped to form an index on student's views of teacher impact. The items that related to this index¹⁸ were:

- The teacher and students listen to and respect what everyone says.
- The teachers encourage me to take responsibility for my own actions.
- The teacher helps us work out ways of solving issues or problems.
- The teacher helps us to think about how well we understand things.
- The teacher gives me feedback and comments that help improve my learning.
- The teacher encourages me to be creative.
- The teacher gives me work that requires me to research new ideas.
- Our teacher understands and gets on well with the students in our class.
- The teacher helps me succeed and appreciates the work I do.
- Our teacher gives different types of work to different students.

These 10 items were identified when developing the survey as important aspects of the teacher-student pedagogical relationship. By combining them into an index it provides a useful overall summary of student's views of this pedagogical relationship.

As shown in Table 17, the students were also very positive about the pedagogical relationship developed by their teachers, with again School D students producing the highest index result of 87.7, School A returned the lowest result of 84.2, and the average result for the five schools was 86.5.

¹⁸ The internal consistency of this index was good as measured by Cronbach's alpha ($\alpha=0.76$)

Table 17: Students' index for teacher impact

Schools	No. of responses	Index (/100)	Standard Deviation	Standard Error
School A	80	84.2	17.65	0.584
School B	45	85.3	16.61	0.733
School C	78	84.5	18.41	0.606
School D	268	87.7	14.96	0.266
School E	94	87.2	18.16	0.534
Total	565	86.5	16.62	0.204

School learning environment: student index

A total of six items on the student survey were grouped to form an index on student's views of the school learning environment. The student survey items that related to this index¹⁹ were:

- I enjoy what I learn in my PYP school.
- I enjoy coming to school each day.
- The learning technologies I use at my school help me with my learning.
- I like the way my PYP school gives me opportunities to experience different things.
- I feel I belong at my PYP school.
- I like the way my PYP school gives me opportunities to share my learning with the other people in the school including students and families.

Table 18: Students' index for school environment

Schools	No. of responses	Index (/100)	Standard Deviation	Standard Error
School A	80	83.8	20.15	0.819
School B	45	84.1	18.18	0.979
School C	78	86.2	18.72	0.740
School D	268	88.9	14.71	0.314
School E	94	83.8	18.39	0.674
Total	565	86.6	17.16	0.255

Index results were positive for students at all five schools, with an average rating of 86.6. School D once more produced the highest score of 88.9 and School A and E the (high) low score of 83.8. In particular there was strong agreement among students that their schools provided them with 'opportunities to experience different things' (see Table 18).

¹⁹ The internal consistency of this index was good as measured by Cronbach's alpha ($\alpha=0.77$)

Students' open responses

As part of the survey, students were asked to consider the open-ended question "What do you like most about what you learn in your grade?". The analysis of their comments identified a range of common themes and these were coded into 13 categories. Table 19 details the percentage response rate for these categories by school. The most common responses focused on specific subjects and on the nature of the teaching that was provided to them.

These open comments demonstrated the impact of the PYP on the students' engagement with the IB framework, their development of the Learner Profile attributes (inquirers, thinkers, principled, open-minded, carers), their motivation and their school connectedness (see Table 19).

Table 19: PYP Student open ended question themes

Response as a % of all responses	Researching, using technology to help research and learning	Working together, working in groups	Learning from each other, share	My teacher makes it interesting/fun/is helpful	Respecting each other and their opinions, feel safe, everyone equal	Hands on activities, types of activities	Inquiry approach, being creative	Learning about the world, world issues, preparing for the future	Students working at different levels, working at my pace	I love school, look forward to coming to school, school is fun	Specific subject, e.g. maths, English	Exhibition	Nothing, school boring	Total number of comments
School A	5.3	1.3	9.2	9.2	5.3	7.9	14.5	5.3	5.3	7.9	46.1	0.0	2.6	76
School B	2.3	11.4	13.6	20.5	2.3	9.1	9.1	22.7	11.4	2.3	34.1	4.5	0.0	44
School C	6.4	25.6	19.2	21.8	10.3	3.8	25.6	7.7	19.2	6.4	23.1	2.6	3.8	78
School D	17.1	13.0	10.8	12.3	5.2	2.6	24.2	14.5	11.5	5.2	32.0	8.2	0.0	269
School E	4.3	5.4	6.5	22.8	9.8	6.5	21.7	13.0	5.4	7.6	44.6	0.0	1.1	92
Overall	10.7	11.8	11.3	15.6	6.4	4.7	21.5	12.7	10.7	5.9	34.9	4.7	1.1	559

While there is considerable variation in the responses from the various schools – for example, School D is noticeably different in the frequency of their comments on researching and the exhibition – there is convergence around several themes for most of the schools (see Table 19). The strong themes in these open comments regarding what the students liked most about what they were learning in their grade converge with the foci of the PYP in terms of the inquiry approach (21.5% of comments made), learning about the world (12.7%), working together (11.8%) and learning from each other (11.3%). The open comments also reinforced the positive impact of the teacher on student learning (15.6% of comments). Just over one third of the respondents also commented positively on specific subjects such as maths and English (34.9% of comments made).

6.5 Overall impact of PYP on student outcomes

This section of the report summarizes the findings that have been given in previous sections of the report regarding the impact of the PYP on students at Victorian Government schools, in particular addressing three key questions:

- In what ways does the PYP impact on student academic achievement?
- In what ways does the PYP implementation contribute to student development of Learner Profile attributes?
- To what extent does the PYP impact on students in other ways?

The results have been based on a combination of NAPLAN student achievement data and surveys completed by principals, teachers and students.

In summary, the findings indicate that the PYP has a positive impact on student academic achievement. Both the principal and teacher survey responses reported a large impact on student learning (see Table 9 and Table 10 respectively), and this was supported by the student survey responses (Table 15 and Table 16). For example, the principals commented on the students' deeper understanding of concepts, improved student outcomes in AusVELS, that students are learning in a collaborative way, and that they have a global perspective. The teachers commented on the impact of the inquiry approach on student learning and the greater student engagement with their learning. Students also strongly agreed about the impact of the PYP on their learning (see Table 16 and Table 19).

The NAPLAN results also demonstrated that the PYP students in Victorian government schools achieved higher scores than the Australian average in 2012 in the Year 3 and 5 literacy and numeracy tests, except for one school in Year 5 numeracy. The students at PYP government schools, for the cohorts 2008-2010, 2009-2011 and 2010-2012, also achieved higher levels in both reading and numeracy when compared to Like and Australian schools at both Years 3 and 5. The effect size measurements, however, show that the growth in achievement of IB students from year 3 to year 5 is slightly less than for Like and Australian schools. In part this can be expected due to the statistical phenomenon known as 'regression to the mean'.

The principals and teachers also responded positively to the proposition that PYP implementation contributes to student development of Learner Profile attributes and student motivation. As discussed in Sections 6.2 and 6.3, both principals and teachers noted the importance of the common language and framework provided by the PYP. Both groups also believed that the PYP had had a medium or large impact on student motivation (100% of principals, 92.9% of teachers).

The principals also responded positively that the PYP has had a medium or large impact (100% of responses) on students' perceptions of teacher effectiveness, in particular in the way that they valued their teachers – seeing them as interesting, well informed, and providing students more challenging learning experiences.

Both principals (100%) and teachers (85.7 %) responded positively that the PYP has had a medium or large impact on students' school connectedness, citing examples of the strong relationships between school and home and the collaborations within the school.

The students' responses to their survey questions were generally positive (mostly agree or strongly agree ratings), as were their indexes for learning opportunities, teacher impact and school environment. The students' responses to the open-ended question "What do you like most about

what you learn in your grade?” were consistent with the high ratings given by students for most close-ended items, for example their nominating of the inquiry approach learning about the world, working together and learning from each other as positive aspects of their learning (see Table 18).

7. Impact on schools

The impact of PYP implementation on schools was investigated through addressing the two related key research questions:

- What is the impact on teacher pedagogical beliefs and practices and on their efficacy and engagement?
- To what extent has PYP implementation led to changes in school culture and climate?

The principal and teacher surveys provided responses that were used to address each of these questions.

7.1 Impact on teachers' practices and engagement

Principals' perspectives

The principal survey asked a number of questions regarding their views of the impact of the PYP on teachers' practices and engagement. An index related to this was in turn created by clustering the following associated questions:

- Qu 15A. To what extent does the IB-PYP implementation impact on teacher's approach to teaching (including practices)?
- Qu 16A. To what extent has the IB-PYP implementation led to changes in teachers' collaboration within the school?
- Qu 17A. To what extent has the IB-PYP implementation impacted on the way teachers work in the school?
- Qu 18B. To what extent has the IB-PYP implementation affected teacher engagement in the school?

Table 20: Index for principals' perceptions of the impact of PYP on teachers

Schools	No.	Index (/100)	Standard Deviation	Standard Error
School A**	1	66.7	27.22	15.71
School B	1	100.0	0.00	0.00
School C	1	100.0	0.00	0.00
School D	2	100.0	0.00	0.00
School E	1	100.0	0.00	0.00
Total	6	94.4	5.40	1.27

** Principal responded 'Don't know' to question, "To what extent does the IB-PYP implementation impact on teacher's approach to teaching?"

As can be seen in Table 20, with the exception of School A, principals rated the impact of the PYP on teachers very highly.

In their open-ended responses to survey questions 15 to 18, i.e. the four questions that make up this index (see Appendix A), principals provided multiple examples of how the PYP has impacted on their teachers' approach to teaching, particularly the amount of time spent in team and collaborative planning, in developing a consistency in approach to inquiry learning and valuing the importance of differentiation. For instance, in response to the question "To what extent does the IB-PYP

implementation impact on teacher's approach to teaching (including practices)?” one principal described how at his/her school there was *“More emphasis on planning in teams and planning for true inquiry”*, and another noted that *“Pedagogy of inquiry is now the main pedagogy and greater understanding of inquiry pedagogy is extremely evident. Notion of internal mindedness is to the fore when planning and teaching. Greater intercultural sensitivity. Greater differentiation to meet the children's specific needs. Greater appreciation of the importance of language learning”*.

All the principals said that the PYP had had a significant impact on the way the teachers collaborated; particularly regarding how they planned and worked in teams and the way they shared professional learning. Illustrations of teacher collaboration included: *“Teachers all work together for the benefit of the students and their learning. Teachers all plan in teams not as individuals”* and *“This has been a significant development - greater collaboration and cohesion across the schools. Greater collaboration has provided greater consistency with approaches to teaching and learning. Staff have embraced the collaborative weekly planning sessions and are now strong advocates for this at every year level and across the specialist areas. Direction for the school has been strengthened due to the collaborative nature of the school”*.

All of the principals also agreed that there had been a large impact on the way teachers worked in the school. Examples of this were that there was a sense of teachers ‘heading in the same direction’, that teachers viewed themselves as learners, and that teachers shared ‘a common (IB) language’. For example one respondent commented that, *“Staff are committed to the program and work hard to ensure that they are the best they can be. They are also working 'smarter' through their collaborative teams. They all speak the same language and are aligned in their thinking”*. Another principal wrote about the multifaceted approach adopted at their school:

We have implemented Making the Primary Years Happen professional learning to improve teacher understanding of highly effective learning and teaching, and inquiry. We have also developed a planning model that ensures units of inquiry are student driven, rather than teacher driven, whilst developing teacher capacity to make direct links with AUSVELS in terms of catering for the range along the developmental continuum. We have also implemented an assessment schedule and moved teachers away from a pretest and posttest approach to assessing student learning at least 3 times a year. We are experimenting with using Guttman Charts to map what students can do and using this data to inform learning and teaching practice. All of these things combined have improved student learning.

The principals likewise agreed that there had been a positive impact on teacher engagement in the school. Examples given in support of this claim were that the teachers expressed a desire for professional learning and improvement, that they sought to work in an IB school and that they want to be part of a collaborative team. For example, one principal wrote, *“Teachers state openly that they only want to work in IB schools from now on – [their] philosophy fits in with the IB. Teachers engaged as professional educators - looking for improvements in their practice. Teachers understand that they are a part of a cohesive and collaborative team and have a responsibility to their team members. Teachers willing and eager to participate in professional learning”*.

Teachers' perspectives

Taken as a whole, teachers' perceptions of the impact of the PYP on their practices and engagement were similar to those perceived by the school principals. Table 21 shows the teachers' responses to survey questions 13A, 14B and 15 (see Appendix B).

In response to question 13A, all of the teachers indicated they felt that the PYP had had an impact on their approach to teaching (including practices). Specific examples of these impacts included changing their approach to teaching (such as more cooperative teaching or working as a facilitator), developing inquiry learning to meet the needs of individuals, and collaborating with other staff such as shared learning through classroom visits, professional development and planning. One teacher commented *"It has given me a new love of teaching as I am engaged and therefore my students are more engaged"* and another wrote, *"I now use an inquiry based teaching approach in a team teaching situation. This means that I have given up trying to control each aspect of the child's learning and development. I more carefully select my resources, line of questioning, learning experiences, opportunities for reflection, modes of assessment, language used, goals for explicit teaching and purpose behind each session"*.

Table 21: Teachers' perspectives of the impact on their teaching, work and engagement in the school

Question	No. of responses	Frequency of Yes responses (%)	Frequency of No responses (%)
Qu 13A. Has the IB-PYP had an impact on your approach to teaching (including practices)?	67	100	0
Qu 14B. Has the IB-PYP had an impact on the way you work in the school?	69	84.1	15.9
Qu 15. Has the IB-PYP had an impact on your engagement with the school?	65	73.8	26.2

Most (84.1%) of the responding teachers believed that the PYP had also caused positive impacts on the way they work in the school. Many of the comments focused on collaboration – such as planning, working in a team and speaking a common language – and expressed a sense of school staff all heading in the same direction. Those who did not feel the PYP had had an impact commented that they have always worked this way or that the PYP had simply offered a language for what they already did. For some it was their first teaching appointment and they had no base for comparison.

Nearly three quarters (73.8%) of the teachers commented that they felt the PYP had had an impact on their engagement with the school. Typical comments included *"I believe in the approach, in how I'm teaching the students and it's supported by the school and IB program. It's in line with my beliefs about how students learn and what's important to teach. I enjoy thinking of ways to engage the students and make them think about what they are learning and the world around them. I like seeing the students in control of their learning."* Those teachers who commented that the PYP had not impacted on their engagement indicated that they would engage with all schools in the same way: *"I engage with my PYP school in the same ways I engaged with my non-PYP school, through building*

relationships with colleagues, students and families. I still feel the same connection with this school and the school community as I did in a school where there was no PYP."

As will soon be discussed, a number of the survey items asked teachers to indicate the extent of impact or change in their beliefs and practices (see Table 23). A sizeable majority of respondents – generally over 75% - indicated that the PYP had caused a large or medium impact across a range of aspects of their work and beliefs. While some of these items are more relevant to the discussion of school culture and climate (Section 7.2), it is relevant to note here that 80.8% of the teachers believed that the PYP had had a large or medium impact on the way they collaborate in the school, and 67.2% believed that there had been an impact on the way they connected with the school community. Teacher examples of the impact on collaboration tended to focus on the importance of planning meetings and the time formally allocated for these: *"Planning sessions each week are together in teams and discussing individual students and groups of students. Working in Learning Teams across the school allows us to collaborate and work on our continuity throughout the school"* and *"Set meeting times following specific agendas ensure units of inquiry are collaborative with much greater sharing of ideas. Resources person ensures a tub of resources of available for each unit of inquiry. PYP planner is a set proforma that ensures all teachers complete the different sections of the planner together"*. The only respondents who believed there was no impact (both from School A) stated that *"There is minimal opportunity to share across year levels"* and that *"teachers collaborate for reasons other than PYP"*.

7.2 Impact on school culture and school climate

Principals

All six principals indicated the PYP had contributed a large or medium impact on the culture and climate in their schools, and moreover had changed the way teachers connected with the school community, and had also led to changes in school leadership (see Table 22).

Table 22: Principals' perception of the impact of the PYP on school culture and climate

Question	No of responses	Large impact/ change	Medium impact/ change	Small impact/ change	No impact/ change	Don't know
Qu 19A. <i>Extent of contribution to a positive school culture</i>	6	83.3%	16.7%	0	0	0
Qu 20A. <i>Extent of contribution to a positive school climate</i>	6	66.7%	33.3%	0	0	0
Qu 21. <i>Changes in the way staff connect with the school community</i>	6	66.7%	33.3%	0	0	0
Qu 22A. <i>Changes in school leadership as a result of PYP</i>	6	66.7%	33.3%	0	0	0

With respect to positive changes in school culture (Question 19A), the principals commented in their open-ended survey responses on the sense of pride within the school and how the whole school was embracing the global scope and nature of PYP education. For instance, one principal provided these examples of the positive changes in school culture: *"A clear direction and purpose brings about a sense of unity. All stakeholders embrace learning and recognize the international nature and scope of education. Greater links with language learning. Greater links with indigenous understandings and*

have formed sister school relationship within and beyond Australia. Staff generally proud of their achievements and of the achievements of their colleagues". Another noted, "There has been a huge shift in staff culture since the introduction of the PYP. Some parents took longer to understand the philosophy of the PYP. As the majority of parents have 'signed up' for a PYP school the culture is definitely more positive and aligned".

Changes in school climate, including the school being a more positive place and more inclusive, were also noted by the principals. For example, one principal wrote on their survey response, "This is a very positive place to work and there are less 'grizzlies' than I have experienced in any other school", but another was a little more circumspect, writing that: "teachers care about what they teach although they find the challenges for continuous improvement through student outcomes demanding".

The principals also noted changes in the way staff connect with the school community in terms of the teachers having more authentic education links with parents and that staff were more willing to make themselves available to speak with parents. For example, one principal noted that "Staff show great respect for the parent community and are always available to talk unless they are actually teaching" and another provided an extended response: "Creating authentic links with families, organisations and industries and linking these with the units of inquiry. Actively involving parents in the education of the children, parent helpers, excursions, camps, specialist in particular fields etc. Incursions and excursions strongly linked to the units of inquiry - no more whole school events simply because it was a nice activity. Greater connectedness with other PYP educators in the Victorian Network of schools - professional learning opportunities and school visits".

Teachers

The teachers were also generally positive about the impact of the PYP on school culture and climate. As shown in Table 23, 86.8% believed that the PYP had made a medium or large contribution to a positive school culture, and 73.1% felt that the PYP had made a medium or large contribution to a positive school climate. Consistent with principal and teacher responses in other sections, most teachers indicated there had been medium or large changes in the way staff collaborated with each other (80.8%). However, a lower number (67.2%) believed that there had been medium or large changes in the way staff connected with the school community, and 76.4% of teachers who had been at the school prior to the implementation of PYP felt that there had been medium or large changes in the school leadership as a result of PYP.

Table 23: Teachers' perception of the impact of the PYP on school climate, culture and community

Question	No of responses	Large impact/ change	Medium impact/ change	Small impact/ change	No impact/ change	Don't know
Qu 17. Changes in the way teachers collaborate in the school	68	52.9%	27.9%	1.5%	2.9%	14.7%
Qu 17. Extent of contribution to a positive school culture	68	47.1%	39.7%	1.5%	2.9%	8.8%
Qu 19. Extent of	67	40.3%	32.8%	4.5%	1.5%	20.9%

contribution to a positive school climate						
Qu 20. Changes in the way staff connect with the school community	67	22.4%	44.8%	10.4%	3.0%	19.4%
Qu 21A. Changes in school leadership as a result of PYP**	22	31.8%	45.5%	9.1%	4.5%	9.1%

** Question only asked of teachers who were at the school prior to the implementation of PYP

It should be noted there was a 20.9% 'Don't know' response rate to the changes in school climate question (Question 19, Appendix B) and a 19.4% 'Don't know' response rate to the changes in the way staff connect with the school community question (Question 20) (see Table 23). A possible explanation for these results could be that the teachers were new to the school and/or on their first teaching appointment and so do not know what the school was like prior to the implementation of the PYP in the school.

An index related to teachers' perceptions of the impact of the PYP on school culture and climate was created by clustering a selection of the survey items related to this theme (see Questions 18-21, Appendix B). The items that related to this index²⁰ were:

- Qu 17. To what extent has the IB-PYP led to changes in teachers' collaborating within the school?
- Qu 17. To what extent has the IB-PYP contributed to a positive school culture?
- Qu 19. To what extent has the IB-PYP contributed to positive changes in school climate?
- Qu 20. To what extent has the IB-PYP led to changes in the way staff connect with the school community?

Although the index score for most schools (see Table 24) suggest many teachers viewed the PYP as contributing to the schools' culture and climate, the overall teacher index score for these questions (79.0) was lower than other index results. As noted above, a possible contributing factor here could be the number of new staff who completed the surveys and responded 'Don't know' to some of the index questions, particularly at School A (see Table 23).

Table 24: Index for teachers' perceptions of the school culture

Schools	No.	Index (/100)	Standard Deviation	Standard Error
School A	25	66.7	29.71	3.48
School B	10	88.0	16.00	3.20
School C	2	76.2	15.06	5.69
School D	35	84.8	19.13	1.72
School E	2	83.3	16.67	5.89
Total	74	79.2	24.11	1.57

²⁰ The construction of the indexes for data analysis purposes is explained in Section 4.3.. The internal consistency of this index was good as measured by Cronbach's alpha ($\alpha=0.79$).

Examples of the positive changes in school culture provided by the teachers in their open-ended survey responses covered similar themes to those given by the principals in their survey responses. These included that the PYP supports teachers working toward a common goal and united approach, the sense of pride in the school, the improvement in the parent/teacher/school relationship, that the school was more caring, difference was appreciated and teachers were more positive. For example, one teacher provided the following associated comments “[We are now] *Cohesive and one voice - know what our direction is and what we stand for. Greater appreciation of difference and perspective. Greater view beyond the school boundary*” and another commented that “*An inclusive curriculum is now offered. Parent/Teacher relationship and expectations have changed for the better*”.

The open-ended teacher survey responses to Question 19 (see Appendix B) provided examples of the positive changes in school climate and covered similar themes such as: working together; having a strong sense of school community; the school being a more inclusive place and; sharing a common purpose. These examples included,

“Our school has a common understanding of the pedagogy behind what we teach and how we teach. It allows all our teachers to work collaboratively to improve student outcomes and openly critique our practices.”

“We have a common purpose. Everyone is respected and valued.”

“A huge increase in motivation and engagement by students, staff and parents.”

“Acknowledgement & celebrations of student & teacher achievements & successes occurs more often.”

Only one respondent²¹ directly indicated they believed the PYP had no influence on school climate, commenting, “*Many of us can talk the talk, but we don't walk the walk*”. In making this comment the teacher seemed to be saying that the staff know the language of the PYP but they are not implementing it.

The teachers who had been at each of the schools before the implementation of PYP were asked to share their thoughts on the changes in school leadership that had occurred as a result of the implementation of the PYP (Question 21A, Appendix B). Some respondents subsequently noted significant structural changes to the leadership team: “*New principal who came from an established IB PYP school. There are now 2 Vice Principals - One responsible for curriculum with and IB PYP focus. Curriculum Coordinators leading the team at each level with an IB PYP focus*”. However, others answered this question by addressing changes within the whole school leadership team. For example, teachers offered the following comments, “*The school has become a collaborative team. The challenge of exploring something new and different built enthusiasm and a desire to reach for a common goal*”, “*(there is) More open communication*” and “*A greater awareness & knowledge of what is being taught at each level, what teachers & students are achieving & the successes that need to be celebrated*”.

²¹ This respondent recorded several negative comments about the implementation of PYP in the school, for example, recording that there had been no change in the way teachers collaborated in the school nor in the way they connected with the school community as well as no impact on school culture or climate.

7.3 Summary

Taken together, the survey responses suggest the PYP has had a significant impact on many aspects of each school's culture and climate as well as teacher beliefs and practices.

The principals in the current study were strongly of the belief that PYP implementation had had a large impact on their teachers' approach to teaching, which included increased time spent in team and collaborative planning. They were unanimous that the PYP had had a large impact on teacher engagement in the school. Furthermore, the principals commented on how the teachers at their school now spoke a common (IB) language and shared a sense of heading in a common direction.

The teachers were also generally viewed the PYP as having an impact on their approach to teaching, and gave examples of the way PYP has impacted on their practices, including changing their approach to teaching (such as more cooperative teaching or working as a facilitator), developing inquiry learning to meet the needs of individuals, and collaborating with other staff such as shared learning through classroom visits, professional development and planning. A clear majority also thought that the PYP had had an impact on the way they worked in the school (84.1%) and on their engagement with the school (73.8%).

The principals and teachers also agreed that there had been major positive impacts on the school environment, including school culture, school climate, staff connections with the school community and leadership in the school. The principals all felt that the PYP had had a large or medium positive impact on school culture and climate; on the ways staff connect with the school community, and on changes in school leadership. The teachers were also of the belief that there had been medium or large changes in the way they collaborate in the school (80.8%) and the way they connect with the school community (67.2%). They further believed that the PYP had made a medium or large contribution to a positive school climate (73.1%) and school culture (86.8%). Examples cited in support of these beliefs included that the staff are working toward a common goal and with a united approach, and that there had been improvements parent/teacher/school relationships.

Those principals and teachers who were at the school prior to the PYP implementation were asked about the extent of changes to leadership within the school. The principals indicated that there had been medium or large changes and noted that there were more professional development opportunities and changes in leadership models. Most of the teachers (77.3%) believed that there had been medium or large changes in the school leadership as a result of PYP and commented that there had been changes in the leadership team and that there was more open communication in the school.

8. Factors, goals and motivation to implement PYP

Each participating school's goals and motivations for implementing the PYP were investigated through addressing the two related key research questions:

- What factors, goals and motives influence schools to implement the PYP?
- And, to what extent are anticipated benefits of the PYP achieved?

The principal and teacher surveys were again used to provide responses to each of these questions.

The decision to become a PYP school tended to come from the school leadership and staff and the leadership of the principal (and their familiarity with PYP) was a critical factor. For example, in one school the principal had travelled overseas and experienced the PYP in a developing country. Upon his return to the school he took the idea of becoming a PYP school to the school community (School B, case study interview). In this and another of the schools the principal took strong leadership whereas in the other three participating schools the decision seemed to be more collaborative with staff – *“Input [was received] from all stakeholders (staff, parents and students) as part of our school review in 2009. All staff committed to its success as a result”* – and once this was achieved other stakeholders (parents and school council) were involved before a final decision was made to start the PYP authorisation process.

Interestingly, with all three schools that were the focus of case studies the circumstances of the school were significant – these schools were under threat of closure because of declining enrolments and/or strong competition from nearby Government and non-Government schools. Thus, a decision to implement the PYP was made to provide a point of differentiation from the other primary schools in the area. In all instances this had a positive outcome with schools now have waiting lists and needing to turn students away if they are not in the school's residential 'zone'²².

8.1 Motivation, factors and goals

According to the school principals (Question 7, Appendix A), by far the strongest influence on the schools choosing to implement the PYP was the program's curriculum, particularly that it is *“a viable and guaranteed curriculum that has world relevance and significance”* (School E Principal). Also important was the international recognition of the program: *“The school needed a whole school curriculum program that was of an international standard”* (School A principal). Some of the principals also noted that they wanted a curriculum that engaged and challenged the students, especially the high achieving ones.

Other comments included that one principal wanted a change in pedagogy *“student engagement. High achieving students needing to be challenged. Pedagogical shift to inquiry”* (Principal, School D), whereas another stated that the inquiry approach matched the school's philosophy and directions: *“PYP aligned with our philosophy of an inquiry based approach to learning. It is based on sound research into best practice across the world. The 'how' to teach is addressed as well as the 'what' and all aspects of the program combine to make a coherent whole. The support from the organisation and*

²² Some schools need to restrict their enrolments – and the number of students they can take – to a particular area or zone around the actual school. This means that certain schools can only take students from a specific neighbourhood area. The parent's (or guardian's) permanent address determines whether a child is eligible to enrol in that school. These enrolment restrictions are sometimes referred to as residential boundaries, school zones, enrolment ceilings or enrolment caps.

other schools ensures its success. As principal, there is a clear direction for the school community so you spend more time actually implementing and improving rather than discussing whether we should or not (Principal, School C).

The teacher survey asked teachers who had been a staff member at the school prior to the implementation of PYP “To what extent are the anticipated benefits of the IB-PYP being achieved?” and for examples of benefits being achieved or for reasons why no benefits are being achieved (Questions 23, 23A and 23B, see Appendix B). Teacher expectations for the implementation of PYP were that

- it would give a global perspective on learning and teaching: for example, *“A rich curriculum that would allow our students and staff to become more internationally minded”*.
- there would be a strong curriculum model and team planning; for example, *“Stronger curriculum model, stronger dispositions as a result of Learner Profile and Attitudes”*
- the program would be inquiry based and student focused: for example, *“Inquiry pedagogy to be strengthened and pivotal to the learning”*.
- the students would be more inquiring: for example, *“More Inquiry. More student engagement”*.
- students’ personal attitudes and behaviours would improve: for example, *“Strengthening of the student voice and connectedness”*.

8.2 Achieving anticipated benefits of PYP

The principals were unanimous (100%) that the anticipated benefits of the PYP are being achieved with a large benefit, and the teacher respondents were very positive (80%, combined medium or large) that the anticipated benefits of PYP are being achieved (see Table 25). Please note that only teachers who were staff members at the school prior to the implementation of PYP were given this question (Question 23).

Table 25: Teachers’ and principals’ perceptions of the extent to which anticipated benefits of PYP are being achieved

Group	No of responses	Large benefit	Medium benefit	Small benefit	No benefit	Don’t know
Principals	6	100%	0%	0%	0%	0%
Teachers	20	65%	15%	15%	0%	5%

The principals were detailed in their examples of the benefits being achieved in their schools:

- *“Whole school curriculum framework for planning and implementation. Whole school collaborative planning built into our professional learning structure. Whole school program of delivery from P-6. Community involvement through mini-exhibitions and year 6 exhibition. Whole school understanding of summative assessment tasks. Being part of the Victorian PYP Network. Sharing of practice through open-schools. Ongoing evaluation every 5 years”*. (School A)
- *“Student interest in learning and attitude to school increased. Student behaviour demonstrating attributes of the learner profile. Parent commitment to the school increased”*. (School B)
- *“Collaborative planning - huge improvement. Inquiry approach. Better direction and accountability. Student centred learning - students better able to manage and monitor their*

own learning. Whole school vision and values. Everyone sees themselves as an important part of the whole". (School C)

- *"Student questioning at higher level. Improved depth of thinking. Consistency in pedagogy & approach across school. Collaborative planning introduced & now valued by all staff. Learning engagements are differentiated and targeted at students. Improved student achievement - particularly with the number of students achieving at and above the indicative VELS/AusVELS levels". (School D)*
- *"Children engaged in learning. Past students and parents providing positive feedback about their primary education and preparation for secondary school. Feedback from teachers who tell us that the philosophy of the PYP fits theirs. Teachers happy to teach through an inquiry model. Interest in the school. The ability to provide an alternative to other local schools". (School E)*

The teachers were not so forthcoming with examples of the benefits being achieved but they did comment on there now being engaged teachers and students and that students were taking action. For example, *"A huge increase in motivation and engagement by students, staff and parents"* and *"The action the children take"*.

8.3 Role of school and parents

School councils play a key role in Victorian Government schools, supporting the principal to provide the best possible educational outcomes for students, with three main responsibilities:

- Finance – overseeing the development of the school's annual budget and ensuring proper records are kept of the school's financial operation.
- Strategic Planning – participating in the development and monitoring of the school strategic plan.
- Policy Development and Review – developing, reviewing and updating policies that reflect a school's values and support the school's broad direction outlined in its strategic plan²³.

These roles are similar to those outlined for the School Board and their relationship with the primary school principal in IB schools (IB, 2009a, pp.11-12), as discussed in Section 2.1.

Although most of the principals reported that it was the principal and staff who agreed to take the proposal to implement the PYP to the school council, because of the statutory responsibilities of school councils in Victorian schools, the school council still needs to be supportive of the initiative at all stages of the authorisation and implementation processes.

The principals reported that they see the role of the school council and parents as being to support the initiative and be involved in every way and to publicly endorse the PYP in the school. In order to encourage this, the schools regularly communicate with parents to keep them informed of happenings in the school. As the Principal of School B described, *"School Council receives monthly updates about the development of IB PYP as does the Parents' Association. Data and progress is provided to School Council and they endorse particular directions relating to curriculum and*

²³ All school councils in Victoria operate under the *Education and Training Reform Act 2006*. Each school council is established by an Order of the Minister for Education, which specifies the council's membership, size and configuration, its objectives, powers, functions and accountabilities and the role of its executive officer who is the principal. The school council has particular functions in setting and monitoring the school's direction. (DEECD, 2013d).

operational procedures. The school runs 2 parent information sessions every term and an introduction to the PYP occurs in March of every year. The parent education program is comprehensive. The parent involvement is growing and has gained strength over the past 2 years”.

Parental involvement in the school and having parents understand the PYP and support childrens’ learning was described as important to each of the schools in this study. Three of the principals specifically commented in the principal survey on the importance of parental support in developing a positive school culture:

“Parent community is extraordinarily supportive and is very community focused... Almost all our parents are committed to the program and appreciate the effort the school goes to to maintain it in a small school.” (School B)

“Some parents took longer to understand the philosophy of the PYP. As the majority of parents have 'signed up' for a PYP school the culture is definitely more positive and aligned.” (School C)

“We see [positive changes in the school culture] when parents support the program through their feedback and take up of the PYP language and dispositions... We know families choose our school because it offers the PYP. People know about the school beyond our shores through recommendations from other parents. We are sharing a common language between home and school. We share the program as a whole school annually in our PYP community evenings, reporting to parents and open days” (School E)

However, it was also noted that parental involvement can be a challenge because, while some parents have consciously chosen the school for their children because of the PYP (perhaps specifically moving to the area because of the school), others have sent their children to the school solely because it was the closest to their home.

Teachers also described in their survey responses the pride of many parents in the school being an IB school: *“The school and parents are proud of our achievement of receiving IB authorisation. It affirms all the positive learning and teaching that occurs in our school”* and *“Our school has always had a strong connection with the community, the IB has strengthened it further”*. They also mentioned the benefits of the greater involvement of the parents in their children’s learning. For example, one teacher commented *“Community projects support our units of inquiry, e.g. parents are currently erecting a greenhouse”*. Others noted *“Parents, students and the community are all more actively engaged in what is happening at school and wanting to be involved”*. Particular examples of parental involvement provided by the teachers included *“parents have opportunities to share their stories with year levels doing particular units”* and *“Many units of inquiry link with the community and we are able to bring in many guest speakers and members of the community to work with children in real life experiences to share their knowledge”*. Teachers also commented on how the exhibition provided an opportunity for parents and their children to share learning experiences, for example, *“The exhibition gives parents opportunity to share their children's achievements”*. However, several teachers additionally commented on the need to educate the parents about the PYP, with one noting this was still a work in progress at the school: *“We still have more work to do in the area of parent involvement but parent education is well planned and established”*, the challenge is *“convincing all parents that this is the way to go”*.

8.4 Problems and challenges

Both the principal and teacher surveys asked an open-ended question regarding any problems/challenges the school was facing as an IB-PYP school (see Question 25, Appendix A and Question 24, Appendix B). Their responses to these questions are provided in this section.

Principals

Financial issues, staffing classes with appropriate personnel, and managing different teaching abilities were issues identified as of greatest concern to the school principals. For example, one principal explained,

“We believe the PYP is an excellent framework, however a framework on its own without the infrastructure to continuously grow teacher capacity, is merely that a framework. The real impact is competent teachers who know and understand how children learn and have the skills to build an optimal learning environment, know their disciplines, assess and monitor student learning and believe all children can learn.”

Due to Government funding arrangements in Victoria, publically funded PYP schools are not able to pass on the costs of being a PYP school to parents, and these costs must be absorbed within the overall school budget which was identified as challenging for small schools in this study (such as School B). Most of the schools do charge a levy for the incursions and excursions that are an integral part of the PYP (for example, the fee at School A in 2014 is \$125 per year for Years Foundation-4 and \$150 for Years 5 and 6), but the membership costs for IB and the professional development program costs for teachers must be funded from the school's global budget. IB professional development was particularly identified by school principals as being expensive. For example, one principal (School D) commented on the financial burden of increased costs of IB workshops:

“The increase to \$80 per person for in-school workshops was introduced in a very unprofessional manner - no forward warning and after the budgets were set for the forthcoming year. To suggest to a school leadership team that an in-school workshop will now cost more than \$10,000 to run but with no say in the selection of workshop leaders is concerning. With all other professional learning programs we select the consultants etc. I understand about quality control of workshop leaders but the experience of 2012 was detrimental to this school and had a negative impact on the staff”.

The Principal of School E made a similar comment: *“we are happy with its growth in our school but wish professional development was less expensive to enable more training opportunities”.*

Other concerns were the sustainability of the program and the challenge of ensuring that teachers understand the PYP curriculum and approaches to student learning. As one principal (School A) commented: *“The challenge is to continuously build capacity of staff in highly effective learning and teaching and inquiry [and] continue to ensure units of inquiry are linked explicitly to literacy and numeracy [and] continue to ensure assessment is ongoing [and] continue to ensure students are encouraged to form relationships between students and students, teachers and students and parents and students”.*

Nevertheless, the principals also commented that the program was ‘wonderful’ and that they would highly recommend PYP as they value the depth of inquiry approach for learning. In their final open-ended comments four of the principals noted, *“We love it!”* (School B), *“Highly recommended for any*

school” (School C), “The IB PYP embraces and reinforces intercultural understanding, international mindedness and the love of inquiry. The learner profile helps us shape the young people into the wonderful ambassadors that will connect with one another on a global scale” (School D), and “The IB PYP is a wonderful framework. The challenge is to ensure that people who really understand curriculum and how children learn best are the people leading the program. The sustainability of the program in terms of meeting the needs of students and teachers living up the IB mission and vision, in contingent on instructional leaders who put the infrastructure in place to ensure this happens” (School A).

Teachers

In response to the open-ended question regarding problems/challenges associated with PYP implementation in the school (Question 24, Appendix B), the major issues noted by the teachers related to achieving planning consistency, financial constraints, staffing and professional development, and aligning the PYP to AusVELS.

Regarding planning consistency, an associated response from one teacher was that as her/his school *“There is a lack of consistency in the way we write programs and therefore in the way knowledge is passed on throughout the school. Because of a large staff turnover each year, many staff members are at different stages with their own learning.”*

The teachers also commented on financial requirements and limited resources. The financial concerns were similar to those expressed by the principals: *“The cost of been an IB school are high for a government school. On-going PD due to the cost is also a problem”, “The increase costs of professional development that have been introduced by the IB - huge impact” and “The biggest challenge is paying for the membership. We are a state school and as a small school and Government funding is limited. Our Parent Club do a lot of fund raising to help. There are many other additional costs e.g. inservices, conferences. Our leadership team pays for flights and accommodation for overseas conferences themselves”.*

Regarding staffing issues, teachers indicated that these included staff turnover, lack of professional development for training staff and accessing sufficient professional development, that staff are at different stages of knowledge about PYP and getting everyone on board was a challenge. For example, for one teacher the challenges were: *“Maintaining appropriate training for the entire staff; large staff numbers and staff turnover create the challenge of all remaining abreast of PYP knowledge”* and a similar comment was *“Providing sufficient professional development to new staff”*. Others noted *“High staff turn over for the last 5 years. Massive loss of PYP knowledge. No PYP induction program for new staff”* and *“New staff need PD. Some confusion over planning. Different teams have different levels of knowledge”*.

For some teachers curriculum alignment with state and national requirements were proving to be a further challenge. A cross-section of these comments included, *“Working within AusVELS and PYP can be challenging at times and a lot of work”, “Marrying AusVELS and IB PYP” “Overlapping the PYP with AusVELS”, “Aligning new curriculum with PYP and TD themes”, “Aligning the IB program with National Curriculum” “Working with both government and PYP curriculums” and “ensuring we're aligning to a changing curriculum (AUSVELS)”*.

While teachers voiced the concerns reflected above, many also sang the praises of the PYP curriculum and its attributes for student learning. For example two representative comments offered

by teachers were, *“It is an exciting way of teaching and I have noticeably seen more engagement in the work the kids are doing. We are actively encouraging and planning reflections and thinking routines that are making the work of students far more in depth and thoughtful. Because of this there is a very positive culture outside and yard duty is a breeze as the kids behaviours are reflections of the Learner Profiles and the Transdisciplinary skills that are explicitly taught throughout every part of their school life”, and “I love the IB. For myself as a professional, for my own children and for the children in my community”.*

8.5 Summary

The decision to apply for PYP authorisation tended to come from the school leadership and staff, and then the decision was endorsed by the school council and school community. The PYP curriculum was a strong influence on a school’s decision, because it was seen as a viable, guaranteed international curriculum that would engage and challenge students.

The principals were unanimous that the anticipated benefits of the PYP were being achieved at a large level, and 80% of the teachers believed that there were medium or large benefits being achieved. Benefits noted by the principals included

- a consistency in pedagogy and curriculum planning
- a collaborative approach to teaching and learning
- a whole school approach
- student behavior is aligned to the Learner Profile attributes
- students using higher order thinking
- improved student interest and attitude to school
- improved student learning outcomes
- understanding and recognition of global considerations
- increased parental involvement.

School councils play a key role in Victorian Government schools, supporting the principal to provide the best possible educational outcomes for students. The principals reported that they see the role of the school council and parents as being to support the PYP and to publicly endorse the school. In order to encourage this, the schools regularly communicate with parents to keep them informed of happenings in the school.

Parental involvement in the school and that parents understand the PYP and support their children’s learning is important to the each schools, and both principals and teachers provided examples of increased parental involvement in the school since the PYP implementation.

Problems and challenges for principals were financial issues (particularly associated with PYP PD costs), staffing with appropriate personnel and managing different teaching abilities. Staff issues were also mentioned by teachers, but their major concerns were also curriculum, planning and workload related.

Although the challenges and problems facing the schools are real issues, both the principals and teachers were generally happy with the decision to implement the PYP in their school and the benefits of the PYP for student learning.

9. Adapting PYP to AusVELS

Each participating school's experiences with adapting the PYP to the new state curriculum (AusVELS) was investigated through addressing the key research question:

- In what ways are schools adapting PYP implementation in response to AusVELS?

The principal and teacher surveys provided responses to this question, as did the interviews with the school leadership team and teachers in the three case study schools.

In general, school principals did not see a large problem in adapting the PYP in response to AusVELS (the Victoria version of the Australian Curriculum), but most were still in the early stages of the implementation process for the four areas of the AusVELS curriculum being rolled out during the period of this study (English, Mathematics, History and Science). For example, the School E principal noted that her/his school *"have just begun to look into English and incorporate it into units"*, and the School A principal wrote, *"We use the PYP as the content and AusVELS as the assessment framework. This year we will look at the units of inquiry and ensure they are in align to the AusVELS. This will inform the development of our Program of Inquiry for 2014"*. The schools are auditing each existing PYP year level programs against AusVELS and incorporating the new learning standards and learning points into the PYP by adapting units of inquiry, sometimes moving them across year levels, for example, to better fit the AusVELS requirements. As the School C principal wrote, *"We use PYP documents, VELs and AusVELS to plan our curriculum. Collaborative planning teams constantly refer to all documents. Audit of Programme of Inquiry against VELs and AusVELS [is ongoing]"*.

One principal (School D) noted that, *"This has been a major piece of work. This has been coordinated through the PYP Coordinators and Curriculum Coordinators at each year level. Some units of inquiry have changed slightly and some have been moved to different year levels. AusVELS and IB PYP Scope and sequence information have been blended into a seamless document. Outstanding work by the PYP Coordinator. The cross curriculum priorities have been strengthened and now form a robust component of our curriculum - embedded throughout the learning"*. In a similar vein, the PYP coordinator at School A commented during the case study interview that the school is taking the opportunity to review the whole curriculum to ensure that PYP and AusVELS fitted together and to ensure that AusVELS sat within an inquiry approach.

The schools also commented on the differences between the PYP and AusVELS. For example, the PYP coordinator in one of the case study schools (School B) described their curriculum in terms of *"AusVELS is the destination, PYP is the journey"*, and the PYP coordinator at another case study school (School E) discussed how in reviewing PYP and AusVELS s/he saw PYP as being the big picture compared with the isolated and repetitive facts of AusVELS.

Although the principals believe that the transition from VELs to AusVELS and relating this to the PYP curriculum is progressing relatively smoothly, many of the teachers saw the adapting of PYP to AusVELS as more of a challenge which required additional meeting times and some major reorganisation of their units of inquiry in the PYP scope and sequence. During the visits to the case study schools there was evidence of additional meetings occurring for curriculum mapping purposes and many new scope and sequence charts being developed for the new school year (2014), which would have added to teacher workloads. The PYP coordinator and teachers at School B, for example, commented that the new AusVELS History and Science curriculum was causing a lot of movement of topics between grades to match the PYP concepts and skills to the AusVELS knowledge and skills

levels. The PYP coordinator at School E similarly commented that the AusVELS History curriculum was leading to more history knowledge and skills at Foundation and Grade1, and a new unit at Grade 3. The new Science curriculum was also requiring new units to be introduced at Grades 2 and 4 levels and that the school was teaching some AusVELS knowledge and skills at different year levels, and they would be monitoring whether this was successful. Given that the schools were still in the early stages of adapting PYP to AusVELS at the time of this research, it could be useful to undertake a follow up study regarding school success in aligning the PYP with AusVELS requirements.

10. Case Studies

Case studies were completed at three of the five participating schools. These case studies draw on the previous data together with observations of classroom activities. At one school this included the Grade 6 students' exhibition and in another, the students at each level making presentations to their parents about their learning. Interviews with the leadership team and nominated teachers at the schools were also undertaken (and with some parents at two of the schools) and DEECD survey data regarding parent opinions of each case study school were used as an additional data source. The purpose of these case studies was to provide a richer story of PYP implementation in Victorian Government schools. Through the principal and teacher interviews it was possible to seek more detailed responses to some of the survey questions and ask other related questions. Furthermore, the DEECD parent opinion survey data provided by the schools enabled a parental perspective on schools to be included in the case studies. Table 26 outlines the data sources used for the three school case studies.

Table 26: Data sources for case studies

	Interviews	Observations	Other data sources
School A	Principal PYP Coordinator 2 classroom teachers	Classrooms	School website School newsletters Curriculum planning documents 2013 DEECD Parent Opinion Survey
School B	Principal PYP Coordinator 8 classroom teachers 6 parents	Classrooms Exhibition	School website School newsletters Curriculum planning documents 2013 DEECD Parent Opinion Survey
School E	Principal PYP Coordinator 5 classroom teachers 20 parents	Classrooms Student presentations to parents evening	School website School newsletters Curriculum planning documents 2013 DEECD Parent Opinion Survey

As noted previously, when probed about why the school had decided to implement the PYP all three principals commented that, although the PYP curriculum was a key factor, the decision was also influenced by a perceived need to differentiate their particular school from the other schools in the area and, in some instances, to grow numbers to avoid being targeted for school closure. All three schools reported this strategy had worked to the extent that each had introduced caps on their enrolments and have implemented 'local zoning' to give preference to local students. This had led to some parents choosing to move into the school's 'zone' to ensure their child/children can attend the

school. Each of the case study schools now has a principal who was not in that role in the school when the decision was taken to apply for authorisation as a PYP school.

10.1 School A

School context

School A is a medium to large sized primary school in an established suburb of Melbourne. Around one quarter of the students come from language backgrounds other than English. There are several other primary schools nearby, and nearly half of the Grade 6 graduates go to independent schools rather than government high schools in Year 7. School A is an affluent school and this makes offering the PYP easier as parents are able to pay the excursion levy and make voluntary contributions to the school building fund. There is a school trip to Italy every second year as part of the language program.

The decision to pursue IB authorisation was initiated by the previous principal who believed that the school needed to be strategic and adopt a whole school curriculum of international standard in order to be competitive in the local context. Due to strong demand for places at the school, the school is now zoned and only enrolls out of zone students if there are vacancies at particular year levels. The school council was involved in the initial process of candidacy but now only seem to be invited to events. The current principal and PYP coordinator were not on the staff of the school when the authorisation process was undertaken.

The school has been authorised as a PYP school for some time and it is also internationally accredited by the Council of International Schools. The latter accreditation is seen as being very important at the school: it is mentioned prominently and repeatedly on the school website as “a recognition for schools around the world for their high professional standards” (School A website), more than their IB authorisation is mentioned. As the school has been authorised for some time, most of the students in the school have always experienced the PYP, and 56% of the students responding to the survey had started at the school in Prep (Foundation).

School climate and culture

Although still generally positive, as illustrated in early sections of this report, the school has more uneven results on school climate and culture when compared with other participating schools. For example, the principal was not as positive as other principals regarding the learning opportunities for students (Table 9) and the impact of the PYP on teachers (Table 20), but s/he rated the impact on school environment (Table 22) more highly than the other principals. Indeed, s/he believes that there have been large benefits for the school in implementing PYP: *“The whole school curriculum for planning and implementation. Whole school collaborative planning built into our professional learning structure. Whole school program of delivery from P-6. Community involvement through min-exhibitions and year 6 exhibition. Whole school understanding of summative assessment tasks. Being part of the Victorian PYP network. Sharing of practices through open-schools. Ongoing evaluation every 5 years”*.

The teachers at School A were the least positive of the participating schools regarding learning opportunities for students (Table 10) and their perceptions of the school culture (Table 23), although they are still positive, with 86% believing that the PYP had had a medium or large impact on the school culture and 82% believing that the PYP had contributed to a positive school climate. As noted

earlier, this could be because nearly a third of the responding teachers were new to teaching and/or new to teaching PYP, i.e. 8 of the 29 respondents started teaching PYP in 2013, and 3 in 2012. Only 5 of the respondents were at the school when PYP was introduced, and 2 of these seem quite negative in their responses about PYP (e.g. *“Teachers collaborate for many reasons other than PYP”* and *“Whilst it's a 'common language', I don't feel a buzz about it within the community”*).

Despite many of the teachers at this school being relatively new to the school, a majority of respondent teachers felt that there had been major impacts on students' academic achievement with respect to inquiry, reflection, research, creativity and thinking about things differently as global citizens. As one of the teachers wrote in response to survey question 7A:

“The PYP allows the children to be active and engaged learners. Children are more connected to issues on a global scale. The units of inquiry allow the development of both knowledge and skills across a range of disciplines. The inquiry based model means students can go further and make meaningful connections to their learning and the world around them. Having the PYP themes consistent from year to year means students are continually building upon what they know. Embedded in the PYP are the learner profiles and attitudes which are part of everyday life and can be drawn upon for learning and development. The learner profiles and attitudes teach students the key characteristics to participate effectively in classrooms, playgrounds and the world around them.”

The teachers also identified challenges which generally related to staffing issues – high staff turnover, change of leadership, teachers being uneducated about PYP, lack of professional development, insufficient planning and lack of time. Teachers' comments included: *“Change of leadership. Turnover of staff”, “Providing sufficient professional development to new staff”, “High staff turnover for the last 5 years. Massive loss of PYP knowledge. No PYP induction program for new staff”, “All staff are at different levels of understanding and practise. Out of school PD is in the holidays which makes it difficult for everyone to attend”, and “Lack of time for teachers to adequately address all the needs of the students”*.

Consistent with the uneven nature of the responses from School A, while student survey responses were very positive at School A, they were nonetheless slightly less so than the students at the four other participating schools. For example, students had the lowest indexes for learning opportunities (Table 16) and teacher impact (Table 17) and the equal lowest index for school environment (Table 18). Students also gave the most negative responses on the Likert scale items in their survey, registering the lowest rating on 12 of the 25 items – including *“I feel I belong at my PYP school”*, but they were the most positive on two items: *“The teacher helps us work out ways of solving issues or problems”* and *“The teacher helps us think about how well we understand things”* (Table 15). However, the students' negative responses on some items – such as *“We often work together in groups to complete tasks”* seems to be a reflection of the way they want to work, rather than what the teacher would like to see happen. For example, according to the PYP coordinator, most of the Grade 6 students completed individual projects for the exhibition as they are competitive and felt that others would let them down. In their responses to the open question on their survey: *“What do you like most about what you learn in your grade?”* (see Table 15), none of the students mentioned the exhibition but 46.1% of the students mentioned their studies of specialist subjects, which are a feature of the school. The school offers a range of specialist studies: Music, Drama, Sport & Physical

Education, Italian, Visual Arts, Science and Reading Recovery, and these are linked to the PYP program of inquiry.

Student outcomes

Student outcomes in NAPLAN testing for School A are strong. There is good retention from Years 3 to 5 in numeracy (with 84% of students having scores from both years), and the 2010-2012 Student Gain scores show that the average achievement of Year 5 students in the school on the numeracy test is ahead of the average achievement of students with the same starting scores, ahead of the average achievement of students with the same starting scores in Like schools, and, at Band 7²⁴, were a whole band ahead of the average achievement for all Australian students.

There is also good retention from Years 3 to 5 in literacy/reading (with 85% of students having scores from both years), and the 2010-2012 Student Gain scores show that the average achievement of Year 5 students in the school on the reading test is ahead of the average achievement of students with the same starting scores, but slightly behind the average achievement of students with the same starting scores in Like schools, and, at Band 7, a whole band ahead of the average achievement for all Australian students.

Parental involvement

A particular issue for the School A centres on parental involvement and parents' views of the school. The school leadership team recognises that the parents' interest levels in the school are not high, with only few parents attending information nights. Parents also were seen as not understanding the PYP and the mission of the school. According to the PYP coordinator, the parents have expressed worries about the transdisciplinary curriculum and seek links with traditional disciplines; they also worry about the amount of time spent on the exhibition and the impact of this on transition to Year 7. As one teacher wrote on their survey response: *"On parent teacher introduction night this year, I had a parent co me up to me to tell me how much he hated the PYP and how children going on to High school are not doing very well because of it. This parent had a child who completed the PYP last year. I have also had other parents tell me how they did not like the way o f PYP teaching. So, the problem is how do you communicate the benefits of the program to parents and the wider community?"*

As discussed in Section 4.2, each year a sample of parents in each government school are invited to complete the DEECD Parent Opinion Survey. The results from the parent survey at School A in 2013 were very negative on nearly every dimension – the school results were below the 10th percentile on school improvement, approachability, teacher morale, parent input, stimulating learning, behaviour management, learning focus, transitions, extra-curricula, homework, general satisfaction, and classroom behaviour. The school results were below the state median but at or above the 25th percentile on reporting, student safety, connectedness to peers, student motivation, social skills and school connectedness (these latter four are all the themes in the Student Engagement category of the survey). The 2011 and 2012 DEECD Parent Opinion Surveys were also very negative about the school with all categories except student motivation being rated below the state median. While some categories went backwards over the three years, there were small improvements in 2013 in

²⁴ As discussed in Section 4.1, Band 2 is the minimum standard for Year 3, Band 4 is the minimum standard for Year 5. With average scores at Band 7 the School A students are performing well above the national minimum standard.

school improvement, teacher morale, parent input, stimulating learning, learning focus, transitions, homework, general satisfaction, student safety, and the four themes of Student Engagement. As the school leadership is concerned about the poor parent engagement with PYP this could be a sign of an improving relationship. An example of the school listening to the parents' feedback is the reintroduction of explicit teaching²⁵, especially a literacy block²⁶. Another example is an improved transition program that engages parents before Foundation students (pre-primary students) arrive at the school and also ensuring that parents are given a clear explanation of why School A is a PYP school.

Changes in the school

Although the current principal and PYP coordinator have been at the school for a few years, and the school had been implementing PYP for several years before that, there are still a lot of changes being made to the school's curriculum, and this is not solely due to the introduction of AusVELS. When they arrived, the principal and PYP coordinator were concerned about the lack of teacher involvement in the writing of units of inquiry and the amount of summative assessment being undertaken. To address this, the teachers are now involved in developing their units of inquiry using a model based on working with concepts not activities as the focus. Moreover, there is differentiation of assessment tasks to meet student ability levels. Taken as a whole, the leadership team see PYP as setting the content and AusVELS as setting the standards and providing an audit tool. However, the leadership team believe there remains a need for more collaborative structures to get staff ownership beyond the surface.

As noted above in regard to the school culture and climate, a high staff turnover is a particular issue for this school with fourteen staff on family leave. These staff members can only be replaced by contract staff, who frequently leave to take up a permanent position elsewhere (hence 11 of the 29 teacher survey respondents had only been at the school 1 or 2 years). This makes immersing staff in the PYP an ongoing challenge. According to the principal, teachers are attracted to seek employment at the school because of PYP but they do not know much about it when they arrive and thus are on a steep learning curve. Indeed, engagement with IB language (Learner Profile Attributes, attitudes, essential agreements) at School A was not as apparent as in other schools visited. For example, while there is an Essential Agreement on the wall of each classroom, the principal indicated in the interview that s/he did not believe that these are being put into practice.

10.2 School B

School context

School B is a small primary school in an established suburb. There are several other primary schools nearby. The decision to pursue IB authorisation came from the previous principal who had

²⁵ Explicit teaching involves directing student attention toward specific learning in a highly structured environment. It is teaching that is focused on producing specific learning outcomes. Topics and contents are broken down into small parts and taught individually. It involves explanation, demonstration and practise. Children are provided with guidance and structured frameworks. Topics are taught in a logical order and directed by the teacher.

²⁶ The Department of Education and Early Childhood Development has a policy that the school leadership team is responsible for "ensuring all teachers from Prep to Year 4 are maintaining a daily two-hour literacy block and a one-hour numeracy block" (DEECD, 2013e). By previously not having a literacy block School A is consistent with the PYP curriculum framework but not following Departmental guidelines.

experienced the PYP while on sabbatical overseas. In addition to being a PYP school, the school also offers an inclusion support program²⁷, which was a recruitment strategy when school enrolments were low, but this program is soon closing as the funding has ended. However the school is locally known for its academic and inclusion programs having created its own space in a competitive local environment – and a commitment that the whole school community takes on the PYP not just the school.

The school has some international students because of being close to a university campus, but it has a relatively small proportion of its students coming from language backgrounds other than English. The Grade 5 and 6 students' responses to the student survey (See Table 15) indicated that the students were not confident in their other language studies, but the school has recently introduced an immersion program and this is being implemented year by year which began with the Foundation (Prep) students in 2012 (in 2013 the program was in its second year and involved both Foundation and Grade1/2 students).

Because it is a small school the costs for IB membership are significant and there are fund raising events to cover these because, as explained earlier, membership costs cannot be directly passed onto parents in Victorian Government schools. Schools can charge a levy for the incursions and excursions that are an integral part of the PYP, but paying this levy can be a particular issue for students whose parents are receiving financial assistance to help with the costs of sending their children to school²⁸ (for example, a Grade 5/6 2-3 day camp can cost \$300). A financial priority in the school budget is ensuring that staff are able to access relevant professional development with staff attend internal and external programs in alternating years.

All but one staff member in the school is in a continuing position, which creates a stable and continuous faculty body. There are always highly qualified applicants for vacancies and selection criteria include ensuring that prospective teachers exhibit an appropriate global perspective to education. There are few staffing issues in this school as the staff is relatively stable with only one retirement in recent times and three going on family leave. Some staff have been employed at the school for their whole career and, according to the principal; there is little interest in staff changing schools to gain promotion. Recently leadership positions have been introduced in literacy, numeracy, ICT and younger staff are looking to these as a way of advancing their careers.

School climate and culture

Overall, School B is a happy and well achieving school (except in Year 5 numeracy on the 2012 NAPLAN tests). The school results on school climate and culture are consistently positive when compared with other participating schools.

The principal's index is above the average of the principals from all participating schools regarding the learning opportunities for students (Table 9), the impact of the PYP on teachers (Table 20), and the impact on school environment (Table 22). In responses to the principal survey s/he commented

²⁷ An Inclusion Support Program works at a whole school level to create an autism friendly environment, as well as providing professional support to staff and targeted intensive support and intervention for individual children and young people. Inclusion Support Programs support children and young people with an Autism Spectrum Disorder (ASD) in mainstream schools by providing the necessary teaching expertise, knowledge and facilities for them to participate as fully as possible in the school's curriculum.

²⁸ For example, The Education Maintenance Allowance (EMA) provides financial assistance to lower income families to help with the costs of sending their children to registered schools in Victoria.

that the PYP has led to students having “A deeper understanding of concepts”, being “Caring towards others. Principled behaviour. Able to reflect on things” and motivated because “The content interests the students and they are involved in finding out more”. S/he also noted impacts on teachers such as “More emphasis on planning in teams and planning for true inquiry” and that “Teachers all work together for the benefit of the students and their learning” with “a real sense of all being on the same pathway and caring for each other”. Regarding the school environment s/he remarked on how “Staff show great respect for the parent community and are always available to talk unless they are actually teaching”.

The teachers at School B were the second most positive of the participating schools with regards to learning opportunities for students (Table 10) and the most positive in their perceptions of the school culture (Table 23). Ninety percent of the teachers believed that the PYP implementation had had a medium or high impact on the students’ academic achievement (Table 11), 100% believed that the PYP had made a medium or large contribution to student development of Learner Profile attributes (Table 12), 88.9% believed that the PYP had made a medium or large contribution to student motivation (Table 13), and 77.8% believed that the PYP had had a medium or large impact on student connectedness to the school (Table 14). The teachers commented, in their responses to the teacher survey open questions on how “The IB PYP encourages deeper thinking and conceptual understandings. The Learner Profile helps us define the behaviours and values we wish to develop in each student” and that the students’ “level of thinking is deeper, they ask great questions and inquire to find answers using various resources independently”. One teacher further noted, “They have more of a global view of the world and are concerned with what is happening in the world. They are able to take independent action. They have a wider range of skills and understandings of those skills and why they are necessary. It encourages them to think on a deeper level”.

The teachers also provided examples of positive changes in the school culture and climate in their survey responses. These included that “This was the start of working as a team and improving the profile and enrolments at the school”, “all working toward a common goal”, “everyone is engaged in the curriculum and student learning and the staff are always willing to help each other”, and “Again we have people endeavouring to book into this school 3 years ahead!”.

The problems/challenges identified by the teachers in their responses to the teacher survey mainly focused around costs and curriculum. Four of the seven teachers who recorded challenges mentioned costs, for example, “The cost of been an IB school are high for a government school. On-going PD due to the cost is also a problem.” And “IB fees. Funding professional development ie workshops etc. Funding the cost of ICT”. Three of the teachers mentioned the problems of “working with both the government and PYP curriculum”, “aligning new curriculum with PYP and TD [transdisciplinary] themes” and “Marrying AusVELS and IB PYP”.

In their survey responses (see Table 16), the students were positive about their experiences at the school, with the highest combined agree/strongly agree response to the statement “The teacher encourages me to take responsibility for my own actions” (97.8%). Although their ratings were still high (over 70% agree/strongly agree), the School B students had the lowest combined agree/strongly agree response to the statements “I can tell others about what I know in another language”, “Students have some say in what is studied and discussed”, “Our teacher understands and gets on well with the class”, “The teacher helps me to succeed and appreciates the work I do”, and “I like the way my PYP school gives me opportunities to share my learning with other people in the school

including students and families” (Table 15). However, according to the principal in the principal survey responses, the students *“see their teachers as interesting and well informed”*, and that *“students really ‘sell’ the school to the community and feel a part of a team”*.

Student Outcomes

The students are generally doing well according to NAPLAN student achievement results. The NAPLAN results reveal there is good retention from Years 3 to 5 in literacy/reading (with 73% of students in the 2010-2012 cohort having scores from both years), and the average achievement of Year 5 students in the school on the reading test is above the middle of Band 6²⁹. The 2010-2012 Student Gain scores for literacy/reading show that the average achievement of students in the school is very slightly ahead of the average achievement of students with the same starting scores, but slightly behind the average achievement of students with the same starting scores in Like schools, and slightly ahead of the average achievement of all Australian students.

There is also good student retention from Years 3 to 5 in numeracy (with 71% of students in the 2010-2012 cohort having scores from both years), and the average achievement of Year 5 students in the school on the numeracy test is at the top of Band 5. However, the 2010-2012 Student Gain scores show that the average achievement of students in the school is: half a band behind the average achievement of students with the same starting scores; nearly a band behind the average achievement of students with the same starting scores in Like schools, and; nearly half a band behind of the average achievement of all Australian students.

As discussed in Section 2.1, the Exhibition is the culmination of the PYP and it occurs in the final year of the programme. The researcher’s visit to School B was timed to coincide with their exhibition day on the transdisciplinary theme *“How the World Works”*. Here the students gave presentations on their work to an audience of parents and family members, students from another school, other students from School B, teachers and visitors. They then had group poster displays where they also answered questions. The students were articulate and confident in the information they were presenting and in responding to the questions.

Literacy and numeracy

According to the principal in the interview, although it not consistent with the PYP, the school continues to teach literacy and numeracy separately because of the Departmental requirement for schools to have a daily two hour literacy block and one hour numeracy block and the requirements around NAPLAN preparation (see Section 2.2).

One of the parents commented in their DEECD parent opinion survey response that the PYP was *“good for literacy but harder for numeracy”*. A home reading recovery program supports literacy development but there is no extended numeracy support being provided by the school.

That the school continues to teach literacy and numeracy separately may be a response to lower performance in the 2012 NAPLAN results where this school was the only one of the PYP Government schools to be below the Australian average score for numeracy at the Year 5 level (see Figure 6), although this was not clarified with the school principal.

²⁹ As discussed in Section 4.1, Band 4 is the minimum standard for Year 5, so the School B students are performing well above the national minimum standard.

The PYP coordinator reported there some grade transitions for gifted children, especially in mathematics, which is made possible by holding separate numeracy blocks. Neither the principal nor the teachers mentioned any tensions regarding these differences between the PYP and what is happening with the literacy and numeracy blocks in the school.

Parental involvement

Parental involvement is a vital aspect of School B. As the principal noted in response to the principal survey question on changes in the school culture, *“Almost all our parents are committed to the program and appreciate the effort the school goes to maintain it in a small school.”* The teachers also commented positively on parent involvement in their survey responses: *“Our school is a Community. There is a lot of parental and community involvement”* and *“Parent community is extraordinarily supportive and is very community focused”*. One teacher also noted in their survey response that *“Parents and community members are invited to be guest speakers now”*.

The exhibition provided an opportunity to speak with parents who were all positive about the PYP and the school. Parents said that found the school to be friendly, warm and global – *“something that hits you from the foyer onwards”*. They reported that there was a cohesive parent group that shared PYP principles. Moreover, parents had chosen the school because of the transdisciplinary curriculum and had been impressed with the use of IB language from Prep (now Foundation). One of the parents noted that some parents had been initially resistant – particularly wanting a graduation not an exhibition – and some had hoped the PYP would go away, but most are now supportive and share the IB principles. These comments were consistent with the principal’s belief that there was increasing support from the parents for PYP in the school. The parents also commented that there were higher costs because of incursions and excursions, gym, swimming and special resources (such as a ‘The Science Behind Arts’ inquiry), but it was generally seen as worthwhile.

The positive comments from the parents were also reflected in the results from the 2013 DEECD Parent Opinion survey which showed that the school’s parents responses were well above the state median and the 75th percentile for primary schools on all categories of responses except reporting, homework and student safety. The 2013 parent opinion survey results were better than the 2011 and 2012 results on all dimensions except teacher morale (which was the same as 2012), reporting, homework and student safety.

Changes in the school

The PYP coordinator believed that the teachers need a depth of understanding of curriculum in order to implement inquiry-based learning and avoid classroom management issues. S/he also said that the teachers need to be flexible around the timetable because of the inquiry focus as the students’ research activities and presentations do not always fit into prescribed timeslots.

From classroom observations and talking to the teachers it is apparent that the transdisciplinary themes, learner profile attributes and essential skills are visually reinforced in all classrooms through posters, charts and displays on the walls. IB language – such as transdisciplinary themes, Learner Profile attitudes and essential skills – are used from Foundation onwards. Teachers report that these are used at home too. One of the teachers commented that the PYP had totally changed the way she worked and she now collaborates with others with a shared philosophy, something that had not happened before teaching the PYP. Her focus now is to always reflectively ask if her approach is the

best way to teach something so the students have the best learning experience, and she always reflects and reviews for next time.

The school has curriculum teams who are mapping the AusVELS prescribed content and achievement standards for History and Science against the IB transdisciplinary concepts and skills and units of inquiry at each year level, for implementation in 2014. Like school A, they were finding it difficult to marry the AusVELS History into the present IB History scope and sequence for the school, and were finding it necessary to move units of inquiry between grades.

School B also has a focus on emotional and social development, and teachers reported that there is less bullying here than in other schools as the students have the 'language' to talk about conflict situations. For example, one of the teachers commented in her interview that the learner profile language influences behavior such that if a student is being aggressive other students will tell the student to be more caring, tolerant and respectful. They also use kimochi dolls to help the students talk about feelings.

The PYP coordinator in the interview reported the school has also experienced some issues with students who had been allowed to start at the school before their fifth birthday³⁰ and some who were age ready for starting school but who are not socially, emotionally and fine/gross motor skills ready for learning. It was also noted by the PYP coordinator that although repeating grades was recommended for a number of these students, this was often resisted by parents.

As a final comment the principal was asked about the most significant change at School B as a result of implementing the PYP, his/her response was, *"I personally would say the galvanising of a school community behind a powerful approach to learning. We are all on the same page and we are all committed to improving student outcomes beyond simply the literacy/numeracy focus of all schools"*.

10.3 School E

School context

School E is a more recently authorised PYP school in an outer Melbourne suburb. It is a culturally diverse school with 35 languages spoken at home by the families and nearly half of the students coming from a language background other than English. The retention rate is strong (76% from grades 3-5 in 2012) but there are still some transient students because of local employment conditions.

The decision to apply for PYP authorisation came from the school leadership and staff because PYP offered a guaranteed and viable curriculum with world relevance and significance. The current principal was a staff member in the school when this decision was taken and s/he has grown with the school. This is the only surviving Foundation – Grade 6 school in the area, others have extended the grades offered to students to include Foundation – Grade 9 or Grade 12 as a way of differentiating themselves. At the time of the decision to pursue PYP authorisation the school had declining enrolments and faced competition from other schools. The school has now reached capacity to the extent that the regional office has agreed to cap enrolments.

³⁰ The Department of Education and Early Childhood Development policy is that to start in Foundation (Prep), the first year of primary school, a child needs to turn five by 30 April of that year. A child must be at school in the year they turn six, which is the compulsory school-starting age.

Like School B, School E is finding the cost of being a PYP school as significant. In 2012 the school expended \$126,000 to cover membership, staff professional development workshop expenses and supplements for staff university courses. The costs to parents for year level learning experiences (incursions, excursions and physical education activities) range between \$126 and \$340 (or \$592 if a child attends the interstate bus tour in Year 6) per year.

School climate and culture

Overall, School E is a happy and harmonious school with high ratings by the principal and teachers in their respective surveys. For example, the principal was the only one to have an index score of 100 regarding student learning opportunities (Table 9) and the School E teachers also had the highest score on the index for teachers' views of student learning (Table 10). However, as only 2 teachers completed the survey the results do not necessarily reflect the views of teachers at this school. The principal also had an index score of 100 for his/her perceptions of the impact of the PYP on teachers (Table 20). The index score for the teachers' perceptions of the school environment was 83.3, however, as noted above, only 2 teachers completed the survey (Table 23).

In his/her response to the principal survey question, the principal described the academic impact on the students of the PYP as *"our children demonstrate world knowledge. Past students report back on the benefits of preparation for their future learning. Our NAPLAN results could be indicative of the philosophy to learning. The dispositions in the PYP are demonstrated while at primary school and in future education. Student surveys provide positive feedback about the curriculum and approaches taken by the school"*. In terms of positive changes to the school climate as a result of the PYP the principal wrote, *"teachers care about what they teach although find the challenges for continuous improvement through student outcomes demanding"*. Furthermore, regarding school culture, s/he stated that *"we see this when parents support the program through their feedback and take up of the PYP language and dispositions staff become more connected and will defend the program outside the school"*. S/he expanded on this comment in the response to the survey question on student development of Learner Profile attributes: *"everything we do and say is related to the LP attributes - our reports, rewards and recognitions, newsletters, units of inquiry - the language and behaviour is reflected throughout the school and into homes"*.

The two teacher comments on their survey regarding the impact of the PYP on school culture were positive: *"Changes include common language, common expectations, stronger curriculum, stronger knowledge of the inquiry process"* and *"High levels of community engagement and support"*. Their responses to a survey question concerning the impact of the PYP on their teaching also supported the principal's belief that there had been a large impact on the way the teachers teach, with one indicating, *"My approach to teaching has changed since beginning to teach PYP. Having a clear structure to developing and delivering curriculum gives students a clear framework across all years at primary school, to teachers and students. The high expectations that PYP requires means that these expectations are transferred into the classroom where teachers and students develop the inquiries together"*. The other teacher's comment was similar: *"My teaching has changed immensely. I am more aware of making the learning student driven. We track our learning throughout the inquiry and all share our knowledge as experts rather than just the teachers' talks, students listen. All the subjects blend into one another and it is difficult to separate the reading, writing, maths and inquiry work because they are all connected. The impact it has had is too big to describe"*.

In his/her case study interview, the principal said they recognised that being a PYP teacher requires

extra work and commitment – *“To be a good PYP teacher you need to have a concept of worldliness and giving back to the community with IB consistent dispositions. This is a different approach from non-PYP schools and teachers require support when immersing themselves in PYP teaching for the first time”*. However, as s/he noted in the principal survey responses, *“teachers, in general, are committed to the PYP and seek to increase their professional learning which in turns improves their engagement when teachers believe in an approach they are more connected”* and *“staff comment they could not teach any other way and love the depth of the PYP units of inquiry”*.

The five teachers that were interviewed at this school were all very positive about PYP, and stated that they preferred it to AusVELS for integrating learning. They believed that the PYP was a more rigorous curriculum, with the units of inquiry embedding the Learner Profile attributes and attitudes as part of students’ learning. One teacher explained: *“The IB-PYP inquiries are linked to each of the learner profiles. They are promoted in and around our school everyday. Students identify when they are being displayed and how. They then make connections between the learner profile in school life and the larger community”*. One of the teachers interviewees also noted that, *“the PYP is easier than VELS for integrating into learning”*.

The teachers also commented on how the PYP had changed the ways they collaborated and shared experiences. For example, one teacher wrote in a survey question response that, *“Since beginning PYP, collaboration has become essential to the development of quality inquiries and ownership by all teachers involved in the inquiry. This then contributes to a high quality whole school Programme of Inquiry”*. Another of the teachers (who had been at the school for 15 years) confirmed that the staff walked the talk of the PYP curriculum and utilise IB language in their conversations with other staff and the students. However, s/he did believe that new teachers without a background in PYP were seeing it as a challenge, and (as discussed below), that more needed to be done to support and mentor novice PYP teachers into IB ways of thinking and working.

The students at School E were generally positive across the three student survey indexes (learning opportunities, teacher impact and school environment). The students’ comments to the open-ended question on their survey were also very positive, and particularly with regards to maths, PE, reading and art, and their excursions. Many of the students were very articulate in their open comments – although some wrote only one sentence others, such as the following, were more expansive:

I like how [School E] creates inquiries that help in the future of your life. An example of this statement is that our inquiry that we had called Decisions are made in the context of social interactions. This inquiry helped making tough decisions especially in the time of a dilemma. At the end of each inquiry the teachers create a summative assessment to show our understanding of the unit of inquiry, it’s also a fun way to end the inquiry! I also like how the aim of [School E] is to always live up to the standards that the PYP attitudes and learner profiles set this way you always have something to live up to. The PYP attitudes and learner profiles help you when you’re about to give up, the attitudes and learner profiles help you have faith in yourself. Also the teachers encourage your every positive move!

This student’s comment is supported by our observations of classrooms where all grades 1-6 have Essential Agreements in their rooms, developed by the students in each class to specify their class’ good personal, educational and social practices, as well as displays of the Learner Profile attributes and PYP attitudes together with their lines of inquiry.

Staffing

Staffing is a particular issue for School E as too few teachers have received PYP training, and the school finds the training expensive, especially when there are 11 or 12 new staff members each year. Induction and mentoring of new staff is recognised by the principal as being very important, and s/he also recognises that the school needs to do more to support and inculcate the new members into the PYP ways of working. Thus recruiting focuses on staff that have a PYP background, who understand inquiry based learning and who are willing to immerse themselves in PYP and the school. In 2014 the principal plans to run professional development sessions for staff on “Making the PYP happen” to support newer staff and deepen their understanding of and engagement with the PYP.

However, maintaining a PYP culture is a challenge when there is so much change, and so in response to this the school has developed policies and processes to ensure there is structure and transparency. By promulgating policies and processes about the expected ways of doing things and how decisions are made the principal said that s/he has endeavoured to make decision-making clear and transparent to all teachers. Because it is a large school, s/he has created three mini-schools (Foundation/1, 2/3 and 4/5/6) with each having 2 people in charge to share the load and encourage succession planning through providing leadership opportunities as well as being a professional learning community to strengthen team planning and teaching.

Student outcomes

The students are generally doing well on NAPLAN achievement results. There is good retention from Years 3 to 5 in numeracy (with 76% of 2012 students having scores from both 2010 and 2012) and the average achievement of Year 5 students in the school on the numeracy test is at the top of Band 6³¹. The 2010-2012 Student Gain scores show that the average achievement of students in the school is half a band ahead of the average achievement of students with the same starting scores in Like schools, and above the average achievement of all Australian students, but slightly below the average achievement of students with the same starting scores.

There is also good retention from Years 3 to 5 in literacy/reading from 2010 to 2012 (with 76% of students having scores from both years) and the average achievement of Year 5 students in the school on the reading test is in the top half of Band 6. The 2010-2012 Student Gain scores show that the average achievement of students in the school is ahead of the average achievement of students with the same starting scores, including the average achievement of students with the same starting scores in Like schools, and half a band ahead of the average achievement of all Australian students.

The school has two hour literacy and one hour numeracy blocks as part of its daily timetable.

Parental involvement

The results of the 2013 DEECD Parent Opinion survey indicate that the parents’ opinions are generally at or above the state median for primary schools with the exception of the dimensions covering parent input, reporting, and extra-curricular activities. According to the principal in the interview, although the School Council is supportive, parent involvement in the school is acknowledged as low. Although, a recent after school student led activity achieved rooms full of parents, so parents and families will come to the school if there is a reason. In the interview the

³¹ As discussed in Section 4.1, Band 4 is the minimum standard for Year 5, so the School E students are performing well above the national minimum standard.

principal said that the school is trying hard to get parents more involved. For example, the school holds its Exhibition at the end of Term 3 and invites the whole school, parents and the local community to participate. A further student led activity is held in Term 4 as part of a strategy for getting parents to the school. The Grade 6 students also have a graduation in December and there is a Christmas concert evening in mid-December each year involving all the children and inviting all parents.

The principal noted in their interview that the cost of extra-curricula activities is an issue for some parents, a problem shared with School B. Another issue was absenteeism, however this also included families taking holidays during school time

Lastly, according to the principal, feedback from local secondary schools that take the school's grade 6 graduates is generally very positive about the PYP in terms of the students being great learners, with parents similarly reporting back that students are well prepared for secondary school.

Change in the school

Providing professional development for new staff will be a priority for 2014 to ensure they are more confident about the PYP and immersed in the curriculum framework.

The staff have analysed, mapped and audited AusVELS against their PYP units of inquiry and have made changes at most grade levels – increasing the amount of history in Foundation, added more local community to Grade 1, added forces and motion to Grade 2, created a new unit on history to Grade 3, produced a new unit on animal survival and adaptation for Grade 4, and found that there was no need for changes at Grades 5 and 6. These changes will be monitored in 2014.

The leadership team was funded by the school to complete the University of Melbourne Postgraduate Certificate in Education (International Baccalaureate) qualification and they have used this experience to lead the staff on PYP implementation.

As a final comment, when asked about the most significant change at School B as a result of implementing the PYP the principal's response was, *"I'd say the richness and depth in the curriculum supported by the PYP dispositions would be the most significant changes for us"*.

10.4 Summary

The case studies of the three schools illustrate a largely successful implementation of the PYP and the benefits of the PYP for student outcomes. Each of the schools is different in terms of its size, location and time of joining, and the proportion of the students who come from a language background other than English; however there is a shared enthusiasm for PYP across the school leadership teams.

Each of the case study schools had sought authorisation as a PYP school because of a perceived need to differentiate their particular school from other schools in the area, and the anticipated benefits of the PYP curriculum for student learning.

Like all of the thirteen PYP Victorian Government schools, the case study schools have NAPLAN literacy and numeracy scores above the average for Australian schools (except School B in numeracy in 2012). The principals and teachers are all positive about the impact of the PYP on student outcomes, and the students are also positive about their learning opportunities.

The schools also differ on a number of aspects. Staff recruitment and retention and staff familiarity with PYP is a challenge in Schools A and E, both of whom have many new teachers each year. Professional development for teachers is a challenge in these circumstances because of the cost and the time needed to undertake it, but it is also recognised as essential for the success of staff adopting the inquiry-based teaching of PYP and implementing the other essential components of the PYP curriculum framework. School B has a relatively stable staffing situation in comparison.

Parent engagement with the school (as reported by the principals) and satisfaction with the school (as reported via the DEECD Parent Opinion survey findings) varies across the schools – from high levels of engagement and satisfaction at School B to lower levels of engagement but medium levels of satisfaction at School E and to low levels of engagement and satisfaction at School A. All schools continue to work hard to attain good parent engagement and familiarity with PYP.

Each of the schools is progressing with adjusting their PYP units of inquiry to accommodate the AusVELS curriculum, with some finding it difficult and time consuming. Indeed, the need to work with the local curriculum requirements (AusVELS) as well as the PYP curriculum framework is one of several tensions between government requirements and the PYP curriculum framework. The others are reporting to parents, the literacy and numeracy blocks and the costs.

As discussed in Section 2.2, the government has specific requirements about the report cards issued to parents twice a year, but the parents in the responses to the 2013 DEECD Parent Opinion surveys at each of the case study schools were negative about the reporting from the school to the parents.

All of the schools now have a two hour literacy and one hour numeracy block for the students from Prep to Grade 4³², consistent with government policy (see Section 2.2), although contrary to the PYP curriculum framework. However, none of the schools saw this as problematic but rather simply as being a necessary requirement for Victorian Government primary schools.

Each of the case study schools mentioned the costs of offering the PYP in terms of the membership cost and the cost of the professional development programs for the school, and the cost of incursions and excursions for the parents. It was suggested that membership could be costed on a per student level rather than a per school basis and that perhaps more professional development could be held in Melbourne rather than interstate or overseas.

The leadership team and teachers in the case study schools were, however, positive about the decision to implement the PYP in their schools because they could see the benefits for students and the school.

³² School A did not have these blocks when first implementing the PYP but they have been reintroduced in response to parent feedback.

11. Conclusions

The aim of this research study was to examine and document the impact of the IB Primary Years Programme (PYP) implementation on student outcomes, pedagogical practice and school culture in the thirteen Victorian Government primary schools that have been authorised to offer the PYP. The project also sought in-depth understandings of the factors that influence schools to implement the PYP, to what extent the perceived benefits of PYP implementation are realised in practice and the emergent challenges and enablers associated with the introduction of AusVELS.

The investigation found that:

- PYP student outcomes on the year 3 and 5 reading and numeracy tests in the thirteen schools, as measured by NAPLAN in 2012, were higher than the Australian average, except for one school in numeracy.
- Principals in the participating schools were very supportive of the PYP and its benefits for the school.
- Both principals and teachers in the participating schools are very strong in their beliefs that the PYP has contributed to student learning, particularly academic achievement, student development of Learner Attributes, and student motivation.
- Students in the participating schools were very positive about their learning opportunities, teacher impact and school environment.
- Principals were strong in their beliefs that the PYP had had an impact on their teachers' beliefs, practices and engagement.
- Teachers agreed that the PYP had had an impact on their beliefs, practices and engagement.
- Principals were confident that the PYP had had positive benefits on the culture and climate in their schools.
- A clear majority of the teachers was confident that the PYP had had positive benefits on the culture and climate in their schools.

The factors that influenced the schools to implement the PYP were very much related to its curriculum – it was an internationally recognised and validated curriculum that would engage and challenge students (especially the high achieving ones) – and also its inquiry based student centered pedagogy, together with its global perspective on learning and teaching.

The schools are concerned about the cost of being a PYP school in terms of the membership cost and the cost of the professional development programs. It was suggested that membership could be costed on a per student level rather than a per school basis and that perhaps more professional development could be held in Melbourne rather than interstate or overseas.

With respect to emergent challenges and enablers associated with the introduction of AusVELS, at the time of the surveys and interviews, most of the schools were still in the early stages of auditing their PYP units of inquiry against the AusVELS curriculum. The principals did not see these changes as at all onerous and felt that the fit was good with only minor changes needed. They were finding that they had to change and adapt the PYP units of inquiry, sometimes moving them across year levels, for example, to better fit the AusVELS requirements, but this was not extensive. The teachers were finding these changes challenging, but the principal from one school who had completed the process was very happy with the outcome as s/he felt that the school now had the AusVELS and PYP scope and sequence information blended into a seamless document.

The findings from the research are similar to those from some other recent PYP research studies, but there are also some significant differences.

The Stillisano et al (2010, 2011) study of the impact of the PYP and MYP in Texas classrooms found no significant differences between IB schools and their comparison schools in math and reading achievement as measured by the Texas Assessment of Knowledge and Skills. In contrast, Jordan's (2009) study of South Carolina PYP schools found that PYP students in grades three, four and five had statistically significant higher scores on English language arts tests than their peers in non-PYP schools. The students in the PYP schools in this study had results similar to those found by Jordan (2009), and contrary to those of the Texan study, in that they:

- achieved higher levels, on average, on both the reading and numeracy NAPLAN tests than the students in the other groups at year 3. This is particularly so for the 2008 cohort (Figures 5 and 7);
- achieved higher levels, on average than the students in the other groups at Year 5 although the differences had narrowed over the 2 years (Figures 6 and 8).

The findings from the Texan study and this study were similar, however, in that the positive outcomes of the IB as identified by teachers and principals included increased teacher collaboration, authentic assessment, increased student motivation for learning, development of critical thinking skills, and increased student global and cultural awareness. Challenges identified by teachers and principals included staff recruitment and retention, balancing the IB with state requirements, the additional time needed for collaborative lesson planning and team meetings.

The findings from this study were also similar to those for the Indian study (Pushpanadham (2012-2013) with regards to students' attitudes, integration of PYP and local curriculum requirements, teacher workload issues and professional development of teachers. Specific findings shared by both studies included that, in both contexts,

- students had positive attitudes to the PYP, the learning opportunities it provides and the impact of their teachers on their learning.
- schools were integrating the PYP curriculum framework with the local curriculum requirements through collaborative planning between the teachers, but were encountering some challenges (more so in India).
- PYP was seen as increasing teacher workload due to documentation, meetings and professional development requirements.
- although recognised as vital, providing professional development for teachers was challenging for the schools because of staff turnover, the cost of the professional development programs, and availability.

Like the Hall et al (2009) study of strategies for successful implementation of PYP, this study found that factors for successful implementation included collaborative planning, support from the school leadership, access to professional development and increased parental involvement. The common challenges were the integration of the PYP with the state curriculum, and resources.

Staffing related issues were significant challenges in this study, and the Stillisano (2010) study, but not in the Hall (2009) study. As in the Stillisano study, challenges identified by teachers and school leadership teams in this study included staff recruitment and retention, balancing the PYP with state curriculum requirements, the additional time needed for collaborative lesson planning and paperwork.

The findings from this study were also similar to those in Twigg's (2010) study of teachers at a European international school in finding that professional development for teachers is important for successful implementation of the PYP, as was their belief in an inquiry based student centred pedagogy, time and flexibility for planning and the support of the school leadership and whole school community.

Overall, the findings from this study add to the growing literature that reinforces the importance of school leadership support, recruitment of suitable teachers, providing teachers with appropriate professional development, and supportive workload allocations, for effective education program implementation. The findings also suggest that the PYP can support positive student outcomes in government schools, including academic outcomes on national standardised tests.

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Appendix A: Principal survey

This copy of the online principal survey shows the logic for questions where the principal was given a different follow up question depending on the initial response.

1. Name of school:

2. When did your school implement the IB IB-PYP?

3. Were you a staff member at this school prior to the introduction of the IB-PYP?

- ☐ Yes
☐ No

4. How many students are at the school?

5. Number of classes at each year level?

Year Level	Number of classes
Foundation/Prep	
Grade 1	
Grade 2	
Grade 1/2	
Grade 3	
Grade 4	
Grade 3/4	
Grade 5	
Grade 6	
Grade 5/6	
Other composite	

6. Who made the decision for your school to become an IB-PYP school?

7. What factors, goals and motives influenced your school to implement the IB-PYP?

8. To what extent are the anticipated benefits of the IB-PYP being achieved?

- ☐ No change
☐ Small benefits
☐ Medium benefits
☐ Large benefits
☐ Don't know

8A. If To what extent are the anticipated benefits of the IB-PYP being achieved is Small/Medium/Large benefits

Please provide examples of the benefits being achieved.

8B. If To what extent are the anticipated benefits of the IB-PYP is No change

Explain why you do not believe there have been any benefits to date.

9. What level of impact has the IB-PYP had on your students' academic achievement?

- ☐ No impact
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

9A. If What level of impact has the IB-PYP had on your students' academic achievement? Is Small/Medium/Large impact

In what ways has the IB-PYP had an academic impact on your students?

9B. If What level of impact has the IB-PYP had on your students' is No impact

What do you think are the reasons for this?

10. To what extent does the IB-PYP contribute to student development of Learner Profile attributes?

- ☐ Not at all
- ☐ Small contribution
- ☐ Medium contribution
- ☐ Large contribution
- ☐ Don't know

10A. If To what extent does the IB-PYP contribute to student development of Learner Profile attributes? Is Small/Medium/Large contribution

In what ways does the IB-PYP implementation contribute to student development of Learner Profile attributes?

11. To what extent does the IB-PYP impact on students' motivation?

- ☐ Not at all
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

11A. If To what extent does the IB-PYP impact on students' motivation? Is Small/Medium/Large impact

Please provide some examples of the impact on student motivation.

11b. If To what extent does the IB-PYP impact on students' motivation? is Not at all

Explain why you think there has been not any impact.

12. To what extent does the IB-PYP impact on students' perception of teacher effectiveness?

- ☐ Not at all
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

12A. If To what extent does the IB-PYP impact on students' perception of teacher effectiveness? Is Small/Medium/Large impact

Please provide some examples of the impact on students' perception of teacher effectiveness.

12B. If To what extent does the IB-PYP impact on students' perception of teacher effectiveness? Is Not at all

Explain why you think there has been not any impact on students' perception of teacher effectiveness.

13. To what extent does the IB-PYP impact on students' school connectedness?

- ☐ Not at all
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

13A. If To what extent does the IB-PYP impact on students' school connectedness? Is Small/Medium/Large impact

Please provide some examples of the impact on students' school connectedness.

13B. If To what extent does the IB-PYP impact on students' school connectedness? Is Not at all

Explain why you think there has been not any impact.

14. Has the IB-PYP impacted on the students in other ways?

15. To what extent does the IB-PYP implementation impact on teacher's approach to teaching (including practices)?

- ☐ No impact
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

15A. If To what extent does the IB-PYP implementation impact on teacher's approach to teaching (including practices)? Is Small/Medium/Large impact

Please provide some examples of the impact on teacher's approach to teaching.

15B. If To what extent does the IB-PYP implementation impact on teacher's approach to teaching (including practices)? Is No impact

Explain why you think there has been no impact.

16. To what extent has the IB-PYP implementation led to changes in teachers' collaboration within the school?

- ☐ No change
- ☐ Small changes
- ☐ Medium changes
- ☐ Large changes
- ☐ Don't know

16A. If To what extent has the IB-PYP implementation led to changes in teachers' collaboration within the school? Is Small/Medium/Large changes

Please provide some examples of the changes in teacher collaboration.

16B. If To what extent has the IB-PYP implementation led to changes in teachers' collaboration within the school? Is No change

Explain why you think there has not been any changes.

17. To what extent has the IB-PYP implementation impacted on the way teachers work in the school?

- ☐ No impact
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

17A. If To what extent has the IB-PYP implementation impacted on the way teachers work in the school? Is Small/Medium/Large impact

Please provide some example of the changes in the way teachers work in the school.

17B. If To what extent has the IB-PYP implementation impacted on the way teachers work in the school? Is No impact

Explain why you think there has not been any change.

18. To what extent has the IB-PYP implementation affected teacher engagement in the school?

- ☐ No impact
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

18A. If To what extent has the IB-PYP implementation affected teacher engagement in the school? Is Small/Medium/Large impact

Please provide some examples of the changes in teacher engagement.

18B. If To what extent has the IB-PYP implementation affected teacher engagement in the school? Is No impact

Explain why you think there has not been any change.

19. To what extent has the IB-PYP contributed to a positive school culture?

- ☐ No contribution
- ☐ Small contribution
- ☐ Medium contribution
- ☐ Large contribution
- ☐ Don't know

19A. If To what extent has the IB-PYP contributed to a positive school culture? Is Small/Medium/Large contribution

Please provide some examples of the positive changes in school culture.

19B. If To what extent has the IB-PYP contributed to a positive school culture? Is No contribution

Explain why you think there has not been any change to the school culture.

20. To what extent has the IB-PYP contributed to positive changes in school climate?

- ☐ No contribution
- ☐ Small contribution
- ☐ Medium contribution
- ☐ Large contribution
- ☐ Don't know

20A. If To what extent has the IB-PYP contributed to positive changes in school climate? Is Small/Medium/Large contribution

Please provide some examples of the changes in school climate.

20B. If To what extent has the IB-PYP contributed to positive changes in school climate? Is No contribution

Explain why you think there has not been any change.

21. To what extent has the IB-PYP led to changes in the way staff connect with the school community?

- ☐ No changes
- ☐ Small changes
- ☐ Medium changes
- ☐ Large changes
- ☐ Don't know

21A. If To what extent has the IB-PYP led to changes in the way staff connect with the school community? Is Small/Medium/Large changes

Please provide some examples of the changes in the way staff connect with the school community.

21B. If To what extent has the IB-PYP led to changes in the way staff connect with the school community? Is No changes

Explain why you think there has not been any change.

22. Were you a staff member at this school prior to the introduction of PYP?

- ☐ Yes
- ☐ No

22A. If Were you a staff member at this school prior to the introduction of PYP? is Yes

To what extent has the IB-PYP implementation led to changes in leadership within the school?

- ☐ No changes
- ☐ Small changes
- ☐ Medium changes
- ☐ Large changes
- ☐ Don't know

22AA. If To what extent has the IB-PYP implementation led to changes in leadership within the school? Is Small/Medium/Large changes

Please provide some examples of the changes in school leadership.

22AB. If To what extent has the IB-PYP implementation led to changes in leadership within the school? Is No changes

Why have there not been any changes to your school leadership?

23. In what ways are you adapting the IB-PYP in response to AusVELS?

24. What is the role of the School Council and/or parents in the IB-PYP in the school?

25. What problems/challenges is your school facing as an IB-PYP school?

26. Other comments about the IB-PYP in your school.

Appendix B: Teacher Survey

This copy of the online teacher survey shows the logic for questions where the teacher was given a different follow up question depending on the initial response.

1. Name of School:

2. When did you start teaching the IB-PYP?

3. Were you a staff member at this school prior to the introduction of IB-PYP?

- ☐ Yes
- ☐ No

4. Which grade level do you teach this year?

- ☐ Foundation/Prep
- ☐ Grade 1
- ☐ Grade 2
- ☐ Grade 3
- ☐ Grade 4
- ☐ Grade 5
- ☐ Grade 6

5. How many students are in your class?

6. Which other grade levels have you taught in the IB-PYP?

- ☐ Foundation/Prep
- ☐ Grade 1
- ☐ Grade 2
- ☐ Grade 3
- ☐ Grade 4
- ☐ Grade 5
- ☐ Grade 6

7. What level of impact has the IB-PYP had on your students' academic achievement?

- ☐ No impact
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

7A. If What level of impact has the IB-PYP had on your students' academic achievement? Is Small/Medium/Large impact

In what ways has the IB-PYP had an academic impact on your students?

7B. If What level of impact has the IB-PYP had on your students' is No impact

What do you think is the reason for this?

8. To what extent does the IB-PYP contribute to student development of Learner Profile attributes?

- ☐ Not at all
- ☐ Small contribution
- ☐ Medium contribution
- ☐ Large contribution
- ☐ Don't know

8A. If To what extent does the IB-PYP contribute to student development of Learner Profile attributes? Is Small/Medium/Large contribution

In what ways does the IB-PYP contribute to student development of Learner Profile attributes?

8B. To what extent does the IB-PYP contribute to student development of Learner Profile attributes? Is Not at all

Why has the IB-PYP not contributed to student development of Learner Profile attributes?

9. To what extent does the IB-PYP impact on students' motivation?

- ☐ No impact
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

9A. If To what extent does the IB-PYP impact on students' motivation? Is Small/Medium/Large impact

Please provide some examples of the impact on students' motivation.

9B. If To what extent does the IB-PYP impact on students' motivation? is Not at all

Why do you think there has not been any impact?

10. To what extent does the IB-PYP impact on students' connectedness to the school?

- ☐ No impact
- ☐ Small impact
- ☐ Medium impact
- ☐ Large impact
- ☐ Don't know

10A. If To what extent does the IB-PYP impact on students' connectedness to the school? Is Small/Medium/Large impact

Please provide some examples of the impact on students' connectedness.

10B. If To what extent does the IB-PYP impact on students' connectedness to the school? Is No impact

Why do you think there has not been any impact?

11. Has the IB-PYP impacted on students in other ways?

12. What aspects of teaching the IB-PYP do you enjoy?

13. Has the IB-PYP had an impact on your approach to teaching (including practices)?

- ☐ Yes
- ☐ No

13A. If Has the IB-PYP had an impact on your approach to teaching (including practices)? Is Yes

In what ways has it had an impact on your approach to teaching?

13B. If Has the IB-PYP had an impact on your approach to teaching (including practices)? Is No

Why do you think the IB-PYP has not had an impact on your approach to teaching?

14. Has the IB-PYP had an impact on the way you work in the school?

- ☐ Yes
- ☐ No

14A. If Has the IB-PYP had an impact on the way you work in the school? Is Yes

In what ways has the IB-PYP had an impact on the way you work in the school?

14B. If Has the IB-PYP had an impact on the way you work in the school? Is No

Why do you think the IB-PYP has not had an impact on the way you work in the school?

15. Has the IB-PYP had an impact on your engagement with the school?

- ☐ Yes
- ☐ No

16. In what ways has it had an impact on your engagement?

17. To what extent has the IB-PYP implementation led to changes in teachers' collaborating within the school?

- ☐ No changes
- ☐ Small changes
- ☐ Medium changes
- ☐ Large changes
- ☐ Don't know

17A. If To what extent has the IB-PYP implementation led to changes in teachers' collaboration within the school? Is Small/Medium/Large changes

Please provide examples of the changes in teacher collaboration.

17B. If To what extent has the IB-PYP implementation led to changes in teachers' collaboration within the school? Is No change

Why do you think there has not been any change?

18. To what extent has the IB-PYP contributed to a positive school culture?

- ☐ No contribution
- ☐ Small contribution
- ☐ Medium contribution
- ☐ Large contribution
- ☐ Don't know

18A. If To what extent has the IB-PYP contributed to a positive school culture? Is Small/Medium/Large contribution

Please provide some examples of the positive changes in school culture.

18B. If To what extent has the IB-PYP contributed to a positive school culture? Is No contribution

Why do you think there has not been no change to the school culture?

19. To what extent has the IB-PYP contributed to a positive school climate?

- ☐ No contribution
- ☐ Small contribution
- ☐ Medium contribution
- ☐ Large contribution
- ☐ Don't know

19A. If To what extent has the IB-PYP contributed to positive changes in school climate? Is Small/Medium/Large contribution

Please provide some examples of the positive changes school climate.

19B. If To what extent has the IB-PYP contributed to positive changes in school climate? Is No contribution

Why do you think there has not been any positive changes to school climate?

20. To what extent has the IB-PYP changed the way staff connect with the school community?

- ☐ No changes
- ☐ Small changes
- ☐ Medium changes
- ☐ Large changes
- ☐ Don't know

20A. If To what extent has the IB-PYP led to changes in the way staff connect with the school community? Is Small/Medium/Large changes

Please provide some examples of the changes in school community connections.

20B. If To what extent has the IB-PYP led to changes in the way staff connect with the school community? Is No changes

Explain why you think there has not been any change.

21. Were you a staff member at this school prior to the introduction of PYP?

- ☐ Yes
- ☐ No

21A. If Were you a staff member at this school prior to the introduction of PYP? is Yes

To what extent has the IB-PYP implementation led to changes in leadership within the school?

- ☐ No change
- ☐ Small change
- ☐ Medium change
- ☐ Large change
- ☐ Don't know

21AA. If To what extent has the IB-PYP implementation led to changes in leadership within the school? Is Small/Medium/Large change

Please provide some examples of the changes in school leadership.

21AB. If To what extent has the IB-PYP implementation led to changes in leadership within the school? Is No change

Explain why you think there has not been any change

22. If Were you a staff member at this school prior to the introduction of PYP? is Yes

What did you anticipate would be the benefits of implementing the IB-PYP in your school?

23. If Were you a staff member at this school prior to the introduction of PYP? is Yes

To what extent are the anticipated benefits of the IB-PYP being achieved?

- ☐ No benefit
- ☐ Small benefit
- ☐ Medium benefit
- ☐ Large benefit
- ☐ Don't know

23A. If To what extent are the anticipated benefits of the IB-PYP being achieved? Is Small/Medium/Large benefit

Please provide examples of the benefits being achieved.

23B. If To what extent are the anticipated benefits of the IB-PYP being achieved? Is No benefit

Why do you not believe there have been any benefits to date?

If Were you a staff member at this school prior to the introduction of PYP? is Yes

24. What problems/challenges is your school facing as an IB-PYP school?

25. Other comments about the IB-PYP in your school.

Appendix C: Student survey

1. School name:

2. Are you a

- ☐ Boy
- ☐ Girl
- ☐ Prefer not to say

3. What grade are you in?

- ☐ Grade 5
- ☐ Grade 6

4. What year did you start at this school?

- ☐ Prep
- ☐ Grade 1
- ☐ Grade 2
- ☐ Grade 3
- ☐ Grade 4
- ☐ Grade 5
- ☐ Grade 6

5. Please indicate to what extent you agree with the following statements

	Strongly Disagree	Disagree	Agree	Strongly Agree	Don't know
The teacher and students listen to and respect what everyone says.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy studying things about other cultures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teachers encourage me to take responsibility for my own actions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We can talk about our ideas without being put down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We often work together in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

groups to complete tasks.					
I can tell others about what I know in another language.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher helps us work out ways of solving issues or problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The things we do in class encourage us to think and ask questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We often link our learning to current events such as those reported in the media.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We study things which are interesting and relevant to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am interested and involved in my own learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher helps us to think about how well we understand things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher gives me feedback and comments that help improve my learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students have some say in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

what is studied and discussed.					
The teacher encourages me to be creative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher gives me work that requires me to research new ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our teacher understands and gets on well with the students in our class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher helps me succeed and appreciates the work I do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our teacher gives different types of work to different students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy what I learn in my PYP school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy coming to school each day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The learning technologies I use at my school help me with my learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the way my PYP school gives me opportunities to experience different things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I belong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>at my PYP school.</p> <p>I like the way my PYP school gives me opportunities to share my learning with the other people in the school including students and families.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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6. What do you like most about what you learn in your grade?

Appendix D: Student cohort group 2010-2012

This student cohort group took the Year 3 NAPLAN tests in 2010 and then 2 years later in 2012 the Year 5 NAPLAN tests.

Student results from the 13 PYP schools on the 4 NAPLAN tests 2010 and 2012

School	Year level	Reading	Retention Read (%)	Narrative	Spelling	G&P	Numeracy	Retention num (%)
School A	3	474		468	444	481	445	
	5	538	85	506	519	532	538	85
School B	3	453		451	443	469	419	
	5	510	73	507	506	510	465	71
School C	3	457		432	425	435	417	
	5	517	86	521	522	513	511	84
School D	3	481		469	481	502	475	
	5	549	85	535	561	564	578	85
School E	3	450		455	434	478	441	
	5	509	76	512	503	514	515	76
School F	3	475		474	444	485	430	
	5	526	85	513	538	531	517	86
School G	3	455		438	420	453	428	
	5	509	86	509	504	498	504	83
School H	3	449		439	426	447	428	
	5	520	89	505	526	527	536	91
School I	3	410		441	426	425	410	
	5	517	75	487	496	511	506	71
School J	3	472		444	424	469	414	
	5	540	81	502	511	520	510	81
School K	3	478		457	436	473	450	
	5	559	87	520	521	531	519	86
School L	3	467		452	448	461	445	
	5	541	76	518	521	531	536	75
School M	3	447		437	418	445	413	
	5	529	85	506	504	511	521	85

Effect size (adjusted to one year) for the 13 IB schools 2010-2012

School	Reading	Narrative	Spelling	G&P	Numeracy
School A	0.4	0.3	0.5	0.3	0.7
School B	0.4	0.4	0.4	0.2	0.3
School C	0.4	0.6	0.6	0.5	0.7
School D	0.4	0.5	0.5	0.4	0.7
School E	0.4	0.4	0.5	0.2	0.5
School F	0.3	0.3	0.6	0.3	0.6
School G	0.3	0.5	0.6	0.3	0.5
School H	0.5	0.5	0.7	0.5	0.8
School I	0.7	0.3	0.5	0.5	0.7
School J	0.4	0.4	0.6	0.3	0.7
School K	0.5	0.5	0.6	0.4	0.5
School L	0.5	0.5	0.5	0.4	0.6
School M	0.5	0.5	0.6	0.4	0.8
Average	0.4	0.4	0.5	0.4	0.6

Appendix E: Student cohort group 2009-2011

This student cohort group took the Year 3 NAPLAN tests in 2009 and then 2 years later in 2011 the Year 5 NAPLAN tests.

Student results from the 13 PYP schools on the 4 NAPLAN tests 2009 and 2011

School	Year level	Reading	Retention reading (%)	Narrative	Spelling	G&P	Numeracy	Retention numeracy (\$)
School A	3	495		455	457	492	453	
	5	552	80	528	528	576	551	79
School B	3	425		420	394	459	422	
	5	531	73	523	492	527	516	73
School C	3	421		421	385	418	387	
	5	518	75	491	465	508	490	73
School D	3	480		465	469	465	443	
	5	540	80	536	536	559	560	80
School E	3	492		455	477	497	492	
	5	511	72	534	506	528	523	71
School F	3	476		454	453	486	444	
	5	539	85	514	504	535	536	84
School G	3	435		424	424	457	446	
	5	490	77	491	474	496	486	76
School H	3	430		450	443	453	435	
	5	528	87	521	505	512	493	87
School I	3	468		439	470	443	456	
	5	516	70	507	524	527	548	63
School J	3	471		446	439	468	434	
	5	546	85	533	511	545	530	85
School K	3	459		454	439	461	438	
	5	534	90	524	510	531	533	90
School L	3	451		460	458	459	452	
	5	521	79	532	532	559	553	79
School M	3	450		444	420	459	409	
	5	534	89	510	495	529	512	87

Effect size (adjusted to one year) for the 13 IB schools 2009-2011

School	Reading	Spelling	G&P	Numeracy
School A	0.4	0.5	0.5	0.7
School B	0.7	0.7	0.4	0.7
School C	0.6	0.5	0.6	0.8
School D	0.4	0.5	0.6	0.9
School E	0.1	0.2	0.2	0.2
School F	0.4	0.3	0.3	0.7
School G	0.4	0.3	0.2	0.3
School H	0.6	0.4	0.4	0.4
School I	0.3	0.3	0.5	0.5
School J	0.5	0.5	0.5	0.7
School K	0.5	0.5	0.4	0.7
School L	0.5	0.5	0.6	0.7
School M	0.6	0.5	0.4	0.8
Average	0.5	0.4	0.4	0.6

Appendix F: Student cohort group 2008-2010

This student cohort group took the Year 3 NAPLAN tests in 2008 and then 2 years later in 2010 the Year 5 NAPLAN tests.

Student results from the 13 PYP schools on the 4 NAPLAN tests 2008 and 2010

School	Year level	Reading	Retention reading (%)	Narrative	Spelling	G&P	Numeracy	retention num. (%)
School A	3	458		447	449	459	440	
	5	536	84	514	508	540	522	84
School B	3	439		411	454	473	470	
	5	531	59	501	490	522	504	59
School C	3	447		428	420	451	441	
	5	538	80	516	501	546	528	80
School D	3	472		481	468	474	461	
	5	544	83	547	536	563	558	83
School E	3	408		414	413	420	437	
	5	536	64	529	509	542	548	65
School F	3	454		430	418	453	435	
	5	529	89	509	491	524	508	89
School G	3	410		418	398	424	408	
	5	491	74	487	480	493	492	74
School H	3	417		448	422	435	416	
	5	499	84	515	512	531	501	86
School I	3	426		407	443	453	401	
	5	443	47	444	454	401	467	47
School J	3	452		458	437	472	442	
	5	534	83	516	511	524	520	81
School K	3	457		421	442	464	446	
	5	538	89	503	510	540	536	89
School L	3	443		441	451	475	473	
	5	524	75	522	512	532	537	73
School M	3	435		434	417	454	428	
	5	527	86	514	495	521	519	84

Effect size (adjusted to one year) for the 13 IB schools 2008-2010

School	Reading	Spelling	G&P	Numeracy
School A	0.5	0.4	0.5	0.6
School B	0.5	0.5	0.3	0.6
School D	0.5	0.4	0.4	0.5
School E	0.8	0.7	0.8	0.8
School F	0.5	0.6	0.6	0.6
School G	0.5	0.5	0.6	0.7
School H	0.6	0.6	0.6	0.6
School I	0.5	0.6	0.4	0.6
School J	0.5	0.5	0.4	0.5
School K	0.5	0.5	0.5	0.6
School M	0.6	0.5	0.4	0.7
Av	0.6	0.5	0.5	0.6