SYSTEMIC SCHOOL IMPROVEMENT AND STUDENT ACHIEVEMENT: A CASE STUDY

Submitted by

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STATEMENT OF AUTHORSHIP

This thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma.

No other individual's work has been used without due acknowledgement in the main text of this thesis. The thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

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Michael Krawec **25th July 2019**

ABSTRACT

Over the past two decades, case studies internationally have identified the effectiveness of high-performing school systems and the systemic school improvement and accountability strategies that influence student achievement. However, there has been little research on the effect of systemic school improvement on student achievement in the context of Australian Catholic educational sectors. The essence of this study is to add to the existing body of educational knowledge on a school system's influence on student achievement.

The metropolitan Catholic School system that is the subject of this study is regarded as a well-performing school system (Benjamin, 2014; Canavan, 2006, 2007c; Gamble, Stannard, Benjamin, & Burke, 2004) where student achievement has been shown to be continuously improving in national and state external testing. The school system has developed a systemic school improvement approach that puts student learning at the centre.

To address the prime purpose of this study—to explore the influence of systemic school improvement on student achievement—the major research question was: **How does a school system influence student achievement?** The following four sub-questions were employed to guide the methodology, data collection and analysis:

SQ1. How do principals, assistant principals, coordinators, and classroom teachers perceive the awareness, usefulness, and effectiveness of a systemic school improvement approach?

SQ2. How do principals, assistant principals, coordinators, and classroom teachers perceive systemic school improvement providing direction and purpose, building capacity, and adapting for sustainable improvement?

SQ3. How have High Learning Gains (HLG) schools and Low Learning Gains (LLG) schools adopted a systemic school improvement approach?

SQ4. How do principals of schools in either HLG or LLG schools perceive a systemic school improvement approach influencing student achievement?

This study is governed by the perception of school and system personnel as the primary means of exploring the relationship between a systemic school improvement approach and student achievement; therefore, it is positioned within a pragmatic paradigm focused on the

"what and how" (Creswell, 2003a, p. 11) of the research problem. The method for the exploration of the research questions is a case study of a systemic school improvement approach, adopted by a metropolitan Catholic school system that influenced student achievement. The study utilised a mixed-methods methodology for data collection and analysis. Data were collected through a questionnaire, document analysis, and semi-structured interviews.

The focus of this study is on secondary schools in two regions of the metropolitan Catholic school system. Perceptions were gathered from school system personnel with significant and direct involvement in, and accountability for, the implementation of a systemic school improvement approach. The participants were the principals, assistant principals, coordinators, and classroom teachers, as well as key metropolitan Catholic school system personnel.

The researcher is a senior metropolitan Catholic school system staff member and so measures were taken to avoid bias and ensure methodological reliability. Recognising that a case study has limits on its generalisability, the study nonetheless is significant in its ability to provide a detailed insight into the dynamics of school system improvement, which can be situated within the current state of understanding from other research and scholarship in the field. It is significant in so far as it can add to existing educational knowledge on school systems in other contexts, and lay the foundation for policy and practice implications, as well as future research.

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GLOSSARY

ACU	Australian Catholic University
AE	Annual Evaluation
AIP	Annual Improvement Plan
COAG	Council of Australian Governments
CR	Cyclic Review
HLG	High Learning Gain schools
HREC	Human Research Ethics Committee
HSC	Higher School Certificate
LLG	Low Learning Gain schools
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
NAPLAN	National Assessment – Literacy and Numeracy
NCSL	National College for School Leadership
NSIF	National School Improvement Framework
OECD	Organisation of Economic Co-operation and Development
OER	Office of Educational Review
OFSTED	Office of Standards in Education
PISA	Programme for International Student Assessment
PLC	Professional Learning Community
R1B1HLG	Region 1 Boys 1 High Learning Gain school
R1B2LLG	Region 1 Boys 2 Low Learning Gain school
R1G1HLG	Region 1 Girls 1 High Learning Gain school
R1G2LLG	Region 1 Girls 2 Low Learning Gain school
R2C1HLG	Region 2 Coeducation 1 High Learning Gain school
R2C2LLG	Region 2 Coeducation 2 Low Learning Gain school
SES	Socioeconomic status
SIP	School Improvement Plan
TIMSS	Trends in International Mathematics and Science Study
TQM	Total Quality Management

CHAPTER 1

INTRODUCTION AND RESEARCH CONTEXT

1.0 Introduction

The motivation for conducting this study started from my previous role as a Regional Secondary Consultant in supporting a metropolitan Catholic school system with a systemic school improvement approach. My professional role was to support school leadership teams to plan, monitor, and review student achievement and school performance in the key areas identified for a systemic school improvement approach. My previous experience as a principal in a large metropolitan Catholic Secondary College had allowed me to experience first-hand the implementation of a systemic school improvement approach. My observations as a Regional Consultant and principal, and the perceptions from school leadership teams, showed that a systemic school improvement approach may have contributed to raising student achievement in a metropolitan Catholic school system, but these observations were untested in any formal way.

Owing to growing demand from governments across the world and the wider public for school system accountability for student achievement and a more transparent comparative reporting between schools, there has been an ever-increasing number of international, national, and local contexts to measure learning outcomes in "education through the eyes of a scientist" (Schleicher, 2018, p. 11), using student performance data from the Programme for International Student Assessment (PISA), National Assessment Program Literacy and Numeracy (NAPLAN), and the Higher School Certificate (HSC). Governments have called for school systems to improve learning and assume greater accountability for student achievement. Even with considerable government expenditure on education and many well-meaning school system improvement approaches, the McKinsey report *How the world's most improved school systems keep getting better* (Mourshed, Chijioke, & Barber, 2010) and Schleicher (2018) research *World class: How to build a 21st century school system* have shown that student achievement in many international school systems has hardly improved in the past two decades.

A systemic school improvement approach by a metropolitan Catholic school system (the subject of this study) has reflected similar moves by international school systems in becoming more accountable for student achievement. Governments in countries such as the

USA, Canada, and England have, for example, embarked on educational change and implemented systemic educational change in developing a more effective school system and improving student achievement (Fullan, 1991, 1993, 2000, 2006, 2008; Hattie, 2005, 2009; Rowe, 2000). One of the major initiatives in such countries has been broad-scale accountability legislation and policy, resulting in changes in pedagogy, curriculum, assessment, governance, and funding. At the same time, a growing literature drawing on international practice is calling for more organic, individualised, and contextualised approaches.

The next two sections build on this introduction by discussing the notions of system accountability and system thinking as a platform for the purpose of this study.

1.1 System Accountability and System Theory

1.1.1 System accountability

The literature on school system improvement (Chrispeels & Harris, 2006; Fullan, 2004, 2011; Fullan, Bertani, & Quinn, 2004; Fullan & Quinn, 2016) suggests that accountability has two main purposes. The first is external accountability where the purpose is for public confidence, by measuring improvement in student achievement using tests and standards. Governments assume that school systems will respond to such externally mandated accountability measures by putting in the necessary school improvement educational changes and will develop the capabilities of classroom teachers to improve student achievement. An externally mandated accountability practice does not build extensive school system capacity, nor does it increase intrinsic motivation or position testing, predominantly, as an approach to school improvement. The second purpose is internal accountability by introducing a systemic school improvement approach focused on improving and sustaining student achievement. The literature on internal accountability refers to professional accountability and positions testing as a basis for data to build capacity in the classroom, school, and school system to inform student learning. Studies have shown that a professional-accountability approach through capacity building across the whole system is naturally motivating and sustains school improvement (Fullan, 2011; Fullan & Quinn, 2016; Hopkins, Munro, & Craig, 2011). Professional accountability in school systems in Ontario, Finland, Japan, and New Zealand have demonstrated that teachers are accountable not primarily to statutory authorities but to their fellow teachers and school principals (Schleicher, 2018).

Hopkins et al. (2011) encouraged school systems to adopt 'intelligent accountability', which is a balance between externally mandated accountability and building capacity for internal accountability (Fullan & Quinn, 2016). The school system emphasises the importance of assessment for learning and its crucial role in developing systemic school improvement by self-assessment or self-review. This is a more organic approach to improvement. Fullan (2011, p. 9) contended from his research that "no system in the world has ever achieved whole school system reform by leading with accountability"—in other words, by focusing on tests and standards. This was supported by Mourshed et al. (2010), who found that in improving school systems, equal proportions of accountability and capacity-building interventions were present. Yet, regarding the percentage of intervention in "good to great" (Mourshed et al., 2010) school systems, there was greater internal accountability through capacity building, rather than government-imposed, externally mandated accountability. While this study did not focus on externally mandated accountability, it recognises that it is one reason for driving systemic school improvement.

1.1.2 System theory

Systemic school improvement and its influence on student achievement has more recently drawn on system theory or system thinking (Senge, 2006) as a cornerstone for a learning organisation. System thinking was interpreted by Turkington (2004) as looking to relations beyond any individual school context and allowing the influence of a school system to enable a more holistic understanding. Similarly, system thinking could encourage a school system to look not only at how it functions but how system leaders, school leaders, and classroom teachers could work better in teams and within networks to achieve school system priorities and national ambitions.

School systems are complex organisations and system thinking is seen as the antidote to this sense of complexity (Senge, 2006). System thinking implies that leaders need to look beyond their own role and responsibilities as classroom teachers, school leaders, and system leaders to consider wider interconnections (Jansen et al., 2011) in order to build collective capacity to lead improvement. System thinking calls for a paradigm shift "from seeing parts to seeing wholes, from seeing people as helpless reactors to seeing them as active participants in shaping the reality, from reacting to the present to creating the future" (Senge, 2006, p. 69). Argyris (1992) argued that this was an organisational learning dilemma as the members of an

organisation would find it hard to learn and understand how organisations operated and, therefore, this approach would not necessarily lead to organisational improvement.

Therefore, a school system requires a more enabling role in leading improvement that is "systematic, self-sustaining and unstoppable" (Sharratt & Fullan, 2009, p. 92). The school system challenge is to "loosen up their organisation—stimulating innovation, creativity and responsiveness and learn to manage continuous adaptation to change—without losing strategic focus or spinning out of control" (UhlBien & Marion, 2007, p. 20). This requires a systemic school improvement approach that builds alignment and coherence, relying on interdependence rather than independence (Jansen et al., 2011), where classroom teachers and school and system leadership travel in the same direction with a clear purpose. The key to systemic alignment and coherence is greater connectivity where educators think and behave collaboratively, and are engaged within and across a school system. This notion of a 'collaborative expertise' approach, as Hattie (2015a) calls it, would likely build a deeper and sustained improvement in student achievement.

Therefore, the purpose of this study is to explore how a school system influences student achievement. This chapter will outline the international, Australian national, and local contexts in which this study is positioned and identify the research problem. An argument for the purpose and importance of the study is also included, together with the research question. An explanation of the assumptions and limits of the study will follow with an outline of the structure of the study and a conclusion.

1.2 Context of the Study

The international, national, and local contexts of this study are relevant in understanding how a school system can affect student achievement. The study context came from what Fullan has called "whole system reform" (Fullan, 2011, p. 1)—how to improve all schools and their student achievement within a school system. The McKinsey report, *How the world's most improved school systems keep getting better* (Mourshed et al., 2010), recognised that education was the key to social and international efficiency and individual and public well-being. Schleicher's book 'World class' (Schleicher, 2018) confirmed this assessment. Only in the last decade have we seen interest turn to specific questions about how we actually go about improving student achievement across a whole system (Mourshed et al., 2010; Schleicher, 2018).

The following sections of this chapter will explore the context of this study at the international, national, and local levels.

1.2.1 International context

In examining international best-performing school systems, a McKinsey report (Barber & Mourshed, 2007) and the book 'World class' (Schleicher, 2018) have reported significant scope for improving educational efficacy. Almost every country in the Organisation for Economic Co-operation and Development (OECD) has substantially increased its funding on education. Governments, therefore, have sought measurable value from educational expenditure (Barber & Mourshed, 2007), with increasing externally mandated accountability. As a result, school improvement has had prominence within government policy. The number and range of external and internal accountabilities that schools now confront have become more challenging and complex (Creemers et al., 2006; Degenhardt & Duignan, 2010). Further, an increasing number of reports and publications are dedicated to how to improve student achievement through systemic school improvement addressing the impact of social, economic, ecological and technological changes in the lives of students in the early twenty-first century (Cisco Systems, 2008; Dalin, 2005; Mourshed et al., 2010; OECD, 2006; Schleicher, 2018; Watkins, Swidler, & Hannan, 2012).

Research on whole-school system approaches has not been universally successful in improving student achievement (Arnett, Moesta, & Horn, 2018; Barber & Mourshed, 2007; Fullan, 2004, 2011; Fullan et al., 2004; Leithwood, 2004; Marzano & Waters, 2009; Mourshed et al., 2010; Schleicher, 2018). Research examining the best-performing school systems has found that almost every country in the OECD has substantially increased, doubled, and even tripled its expenditure for education, yet very few of the school systems have measured an improvement in student achievement. In a large number of international school systems, student achievement has showed little improvement or even deteriorated or regressed (Arnett et al., 2018; Barber & Mourshed, 2007; McKinsey & Company, 2007; Schleicher, 2018).

The interest in systemic school improvement has been driven by examining how different countries perform in international test benchmark comparisons. Governments with the internationally best-performing school systems (Barber & Mourshed, 2007; Fullan, 2011; Mourshed et al., 2010; Schleicher, 2018) place great emphasis on comparing students' achievements in global tests. Tests such as the OECD's PISA and the Trends in International

Mathematics and Science Study (TIMSS) have made it possible to compare student achievement data in key subject areas across countries and school systems to help policy-makers make comparative conclusions by looking outward instead of inward (Schleicher, 2018). Increasingly, governments are judging school systems and the success of a school system by the PISA test measure without considering school context (Barber & Mourshed, 2007; Schleicher, 2018).

Since the OCED created PISA in the late 1990s, governments have been monitoring student achievement, causing a great deal to be learned about high-performing school systems over the last two decades. At the same time as PISA results were being released, the McKinsey report *How the world's most improved school systems keep getting better* was published (Mourshed et al., 2010). This report examined twenty countries or sub-regions of countries, including developing countries, whose student achievement was going from 'poor to fair', where they were achieving the basics in literacy and numeracy; 'fair to good', by getting the data and accountability foundations in place; 'good to great', in shaping the profession of principals and teachers; and 'great to excellent', by improving through peer-led learning for principals and teachers. In these twenty countries, improving student achievement was a major charge of any school system. McKinsey reports have identified the top five countries as Korea, Finland, Hong Kong, Singapore, and Canada, and noted that other countries have not improved their student achievement (Barber & Mourshed, 2007; Mourshed et al., 2010). Other studies in England from the late 1990s (Fullan et al., 2004; K Leithwood et al., 2004), the USA (Arnett et al., 2018; Hopkins et al., 2011), and Scotland (Her Majesty Inspectorate of Education, 2006) have shown why some of the internationally top-performing school systems perform better than others and why some educational change agendas succeed while others do not.

More recently, Schleicher (2018) exposed the myths, identified the challenges, addressed how to make education change happen, and provided direction on what should happen now. He encouraged all involved with school systems, especially those with a vested interest in learning and teaching, to work together to make education relevant and meaningful to future generations of students facing a rapidly changing world.

Perceptions of how school systems can bring about improvement have changed over time. School effectiveness and improvement have been part of the thinking and education policy of governments and education authorities for at least the past thirty years. The task of the

1980s was to describe effective schools; the 1990s focused on how to make schools more effective; and the 2000s detailed what effective systems were. The emerging question in another McKinsey report called *Shaping the future: How good education systems can become great in the decade ahead* suggested that it was about "how to make school systems more effective" (Barber & Mourshed, 2009, p. 7). Barber and Mourshed (2009) described 2010 as the 'frontier challenge' in education and the trend in Figure 1.1 shows a move from individual school effectiveness and improvement to a greater focus on how school systems could be more effective in improving student achievement through systemic school improvement.

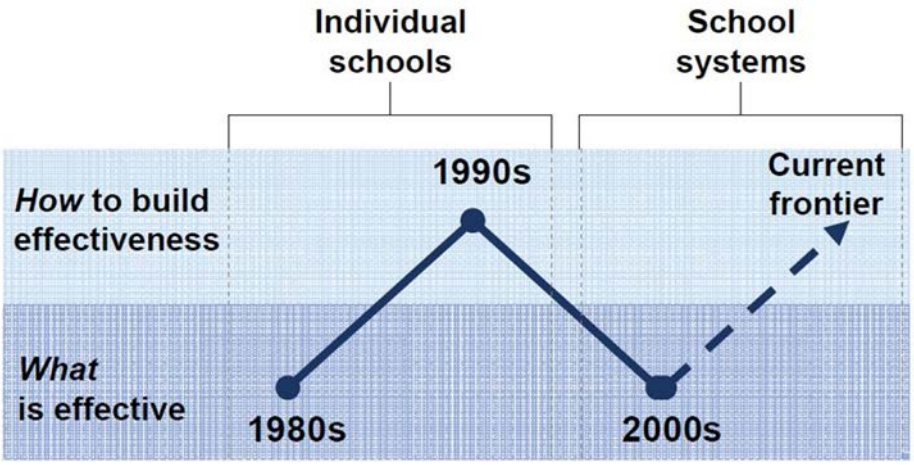

Figure 1.1 The frontier challenge of defining and building school system effectiveness (Barber & Mourshed, 2009, p. 7)

Research prior to 2000 ignored the role played by school systems in influencing student achievement. However, there was a growing literature outlining the role of school systems, and the emergence of new paradigms that captured the educational imagination. In examining the phases from school to school system, improvement research (Barber & Mourshed, 2009; Fullan, 2004; Hopkins et al., 2011) highlighted the need to balance 'top-down' (school-system-driven) and 'bottom-up' (school-driven) school improvement approaches and to readjust this balance over time as school systems' unique geographical location, demographics, history and structure, policies and practices changed. It was recognised that a school system top-down approach usually only raised student achievement in the short term (Fullan, 2004). To sustain continuous improvement, the need was to move to a school system where the bottom-up approach saw classroom teachers and school leaders lead systemic school improvement. It was not possible to move to this position without building system capacity (Barber & Mourshed, 2009; Fullan, 2004; Hopkins

et al., 2011). International research on high-performing school systems identified a shift in thinking from a loosely coupled school system in which schools were relatively autonomous, to a more tightly coupled interdependent relationship between the school system, the school, and the classroom (D. Hargreaves, 2008). Further research in the USA investigated the 'forces of progress' and the impact of 'push' and 'pull' forces that enabled progress (Arnett et al., 2018).

Internationally, attempts to improve student achievement have undergone a number of phases over the years, from school effectiveness and school improvement to school cultural transformation approaches, with each offering possible answers as to why student achievement in some school systems perform better than others (Degenhardt & Duignan, 2010; Lee, Williams, & Lo, 2006). School improvement has reached such a high level of complexity that a brief overview is presented in Chapter 2, Literature Review.

In the international context, research has studied the role of school systems as sources of school effectiveness and improvement with the ability to build system capacity. Research has indicated that student achievement is central to educational change and, increasingly, there has been an attempt to identify the policies and practices that appear to benefit student learning. The research has been largely descriptive and case studies have made a significant contribution to understanding how school systems influence student achievement, but there have been few studies in the Australian educational context. Certainly, more research is required to determine definitively the features of a high-performing school system. Further, the practice of analysing systemic student achievement data as evidence to driver for systemic school improvement and accountability is at the forefront of government expenditure globally.

Australia has a similar story to the international context with an increasing concentration on student achievement as a national driver for systemic school improvement and the provision of government expenditure. The national context in Australia is discussed in the next section.

1.2.2 The national context in Australia

The Australian school system (Australia. Department of Education, Relations, & Gonski, 2011) has three educational sectors:

i. **The government sector** – the public sector or public education system, which is fully funded by the government.

ii. **The independent sector** – private schools funded partially from the public purse.

iii. **The non-government sector** – faith-based schools, like the metropolitan Catholic school system, also partially funded publicly. The Catholic school system for most of its history has held 20 per cent or more of the national student enrolment share (Keating, 2011).

In Australia, federalism had led to parallel funding of school system sectors. The government sector is predominantly funded by state governments and the non-government sector by the federal government. This has caused inconsistences in the pattern of funding between the school system sectors, giving rise to tensions from the government sector lobby around the levels and conditions for their public funding (Keating, 2011). While this study is not about externally mandated accountability for funding, it highlights the importance of government expenditure for school systems to resource directly or indirectly what happens in the classroom, school, and school system. The funding debate started with the release of the initial Gonski response in 2012 and continues in 2018 under the Gonski 2.0 review. Compared to other OECD countries, Australia has been found to be slightly below average when it comes to international government funding for schools (Goss, 2017) and Catholic schools are not all funded at the same level as the government and independent sectors. The Gonski 2.0 review reflected this (Goss & Sonnermann, 2018).

Australian Catholic school authorities have also used PISA results to provide evidence of the Catholic school sector's "high education outcomes in terms of performance and equity" (National Catholic Education Commission., 2011). In fact, according to the Commission, Catholic schools in Australia perform better in terms of equity outcomes than do schools in Finland, even though Finland is regarded as the benchmark internationally on equity. If this is the case, further research is required to better understand the role played by the Catholic school system in influencing student achievement.

The Australian school system has improved over time, guided by three declarations—one from Hobart (Ministerial Council on Education and Employment, 1989), another from

Adelaide (Ministerial Council on Education and Employment, 1999), and a third from Melbourne (Ministerial Council on Education and Employment, 2008), stating priorities for Australian schooling. These declarations demonstrate a growing awareness of the need for a national foundation and agreement on the desired outcomes for Australian schooling, and the means of achieving these outcomes.

In 2008, the National Declaration on Educational Goals for Young Australians (Ministerial Council on Education and Employment, 2008), better known as the Melbourne Declaration, acknowledged international changes were placing new demands on the Australian school systems. This declaration formalised and reinforced the increasing involvement of the federal government in education policy and outlined new goals for schooling. The Melbourne Declaration identified two educational goals for young Australians:

i. Australian schooling promoting equity and excellence.
ii. All young Australians becoming successful learners, creative individuals, and active and informed citizens.

Again, in this declaration, all students were to achieve "the essential skills in literacy and numeracy" (Ministerial Council on Education and Employment, 2008, p. 8); however, one of the commitments to action called for a strengthening of external accountability and transparency where reporting "good quality information on schooling is important for schools and their students, for parents and families, for the community and for governments" (Ministerial Council on Education and Employment, 2008, p. 16). This national push for improvement has seen closer accountabilities for funding and an increased reliance on standardised external testing as a measure of student achievement (Rowe, 2005).

In 2008, the various state-based tests of literacy and numeracy were replaced by one national test, the NAPLAN Test, for Years 3, 5, 7 and 9. This was the first time all students in Australia were assessed on literacy and numeracy using the same year-level tests.

In 2009, state, territory, and federal education ministers entered into a National Education Agreement through the Council of Australian Governments (COAG) to improve student achievement. The four areas of educational that received particular priority in this agreement are summarised by Fullan (2011, p. 7) as:

i. Linking Australian government funding to state and territory outcomes for schooling by developing a national framework of schooling;

ii. Improving student and school performance by increasing school-level transparency and accountability;

iii. Closing the gap in educational outcomes between Indigenous and non-Indigenous students; and

iv. Developing and implementing a national curriculum across all learning areas from kindergarten to Year 12.

Although Australia's national education goals are long term, the strategies for achieving them have the potential to exacerbate short-term planning and create *presentism*. Presentism and short-term planning may be linked but they are not the same thing. According to Albright, Clement, and Holmes (2012), existing structures and the types of school improvement strategies mandated through additional government funding do not address the problems of presentism and short-term planning (A. Hargreaves, 2010) and reduce a school system's ability to provide sustainable improvement for schools. Presentism is associated with short-term thinking and plays an inhibiting role in educational innovation. It focuses on short-term results and the immediate rewards that teachers look for as a result of school accountabilities. Presentism has saturated education in most Western countries and their school systems according to Albright et al. (2012), in spite of efforts by educators and governments to minimise or eliminate it. These efforts are crucial to school improvement because sustainable change requires long-term perspectives. In other research, presentism has been discussed as the 'habit of the present' (Arnett et al., 2018).

The Australian experience of systemic school improvement has been relatively recent and has been directed by national goals. Emerging from the Melbourne Declaration (Ministerial Council on Education and Employment, 2008), government policy and the 'Building the Education Revolution' (BER) program (Lewis, Dollery, & Kortt, 2014) generated multiple educational changes and consequent pressures in schools for principals and classroom teachers that exacerbated presentism—for example, the launch of the Smarter Schools National Partnerships (O'Meara, 2011), which focused on increasing teacher quality and building teacher and leadership capacity. However, this fast-paced improvement agenda focused classroom teachers' attention on short-term improvements in students' standardised test results, and the need to manage immediate concerns dictated by government policy. Some of these educational improvements included: BER program (Lewis et al., 2014); the National Assessment Program, Literacy and Numeracy (NAPLAN); the *My*

School website; the Trade Training Centres program; the Australian Curriculum; provision of technology to schools through the Digital Education Revolution program; Literacy and Numeracy National Partnership (Mills, 2015); Low Socio-Economic National Partnership; and Teacher Quality National Partnership. As well, there was the National Teaching Professional Standards framework and the National Principal Professional Standards framework (Australian Institute for Teaching and School Leadership, 2011). Through the National Professional Standards for Teachers and Principals, each state joined with the federal government to make sure that whatever school a child attended they would receive a world-class education delivered by classroom teachers that met the same level of proficiency.

State governments and school systems introduced the notion of 'school improvement' initiatives based on the setting of targets and timelines for schools to improve levels of student achievement. A lead approach for most Australian school systems was to have a school improvement and accountability framework to guide school improvement efforts. Typically, these frameworks described a wide range of educational domains with specific school review cycles between three and five years. Schools were expected to develop strategic improvement plans that included improvement goals and strategies. Annual operation plans described improvement priorities in each school year and schools were expected to self-review and annually report publicly to their local community. The school improvement frameworks generally made provision for an external review of a school's progress as part of a school review cycle.

Some school systems assist schools to make their self-review and external review by providing described levels of practice and performance. Examples include the four levels of practice in the NSW Department of Education and Training framework and similar levels being used by government school systems in Queensland, Tasmania, and the Northern Territory. The ACT Department of Education school improvement framework has five levels. The metropolitan Catholic school system examined in this study initially used seven levels before adopting the National School Improvement Tool (NSIT) (ACER, 2016). Several other Catholic systems in Australia used seven levels, for example the Wollongong Catholic school system.

To be consistent with what school systems were already doing, in 2016 the federal government introduced the NSIT. The NSIT domains have been recognised by all school systems as key areas of school practice. The described levels of practice, which assist in

school self-reviews and external review processes, are consistent with the described levels in a growing number of Catholic and government school systems. The added value that the NSIT offers is the possibility of a national agreement on a set of core aspects of school practice for assessing and monitoring school improvement over time. The metropolitan Catholic school system in this study has adopted the NSIT.

The Gonski report (Gonski et al., 2018) *Through Growth to Achievement: Report of the Review to Achieve Educational Excellence in Australian Schools* found that many Australian schools are cruising and not improving. This report seeks to build on a continuous improvement effort by recommending three priorities and five interventions necessary to enable educators and schools and their communities to help all students to reach their full potential. The twenty three recommendations outline the ways that Australia could improve student achievement, and ensure that school systems and schools truly prepare Australia's young people for a rapidly changing world. This Gonski report has implications for Australian school system policy and practices.

In responding to the international and Australian national context of system improvement and accountability, the metropolitan Catholic school system has increasingly concentrated on school performance data to inform a policy agenda that improves both student achievement and government and public accountability. This is further discussed in the local context.

1.2.3 The local context — metropolitan Catholic school system

The local context focuses on the case study of a metropolitan Catholic school system and its approach to systemic school improvement. This system is registered and accredited by the state authority and is one of the largest members of the non-government Australian school system. Founded in 1965 (Turkington, 2004, p. 4), it is currently responsible for approximately 71,000 students enrolled in 152 primary and secondary schools across three regions, and employs approximately 9,000 staff (White, McLean, & Randazzo, 2017). The growth, development, and maturation of this metropolitan Catholic school system fall within the "context of continually changing social, political, ecclesial and educational environments" (Canavan, 2007a) over the past fifty years.

Until the early 1960s, without any financial assistance from the federal government, the metropolitan Catholic school system and Australian Catholic dioceses struggled to enrol all

those seeking places in a Catholic school. However, since then, government funding has been provided and the parish primary and regional secondary schools have become partners in diocesan systems of Catholic schools.

The metropolitan Catholic school system has been involved in systemic school improvement since 1988. Initially seen as a means of setting priorities and providing internal and external accountability, school improvement is now viewed as a driver of learning and teaching, through a systematic, reflective, and evidence-based approach. It also supports and challenges classroom teachers to improve their practice against professional standards, to improve student achievement, to develop targeted intervention programs and to provide professional learning in instructional leadership to school leadership teams. In 2006, the systemic school improvement approach, known as the School Review and Improvement Framework, was developed and has since been reviewed on three cycles of external whole-school system reviews (Canavan, 2007b; Gamble et al., 2004). The review report suggested that a systemic school improvement approach that encouraged dialogue, openness, and trust, with the empowerment of school leadership teams, would contribute to the improvement of student achievement.

With the introduction of a systemic school improvement approach, principals became responsible for engaging their school communities in implementing this approach in reply to the known needs of their students. The approach was mandatory in regional primary and secondary Catholic schools as a way for school communities to participate in evidence-based reflection on identified school priorities in order to improve student achievement.

The metropolitan Catholic systemic school improvement approach continues to provide principals with a series of practices to lead school improvement. The approach guides school improvement through a Strategic Improvement Plan, the School Annual Improvement Plan, the Annual Evaluation of selected components, and an external Review of the School's Learning Improvement Journey.

The systemic school improvement approach is linked to other metropolitan Catholic school system practices, including Personnel Performance Planning and Review, Contract Renewal and Reappointment, the Leadership Framework, and compliance practices for registration and accreditation, which are all guided by the school system's strategic plan.

The influence of the school system on student achievement is yet to be investigated and so is the central problem of this study. I identified that while a considerable amount of professional learning had gone into the implementation of systemic school improvement, there was no evidence, one way or another, of a relationship between the systemic school improvement approach and student achievement. Consequently, this study is concerned with the perceived influence of a school system on student achievement.

I found that the metropolitan Catholic school system had little systematic evidence of the implications of a systemic school improvement approach. This was particularly the case where schools were at a different performance level in their school improvement journey because of their either geographical location, demographic characteristics, history and/or other school-related socioeconomic status. Schools may have been at a point moving from 'poor to fair', 'fair to good', 'good to great' or 'great to excellent'. Nevertheless, my experiences and observations suggested that the extent of the impact of a systemic school improvement approach on student achievement was highly contextual. In this school system, school leaders were not necessarily ready to start school improvement at the same point, given their contextual differences; however, all schools, as well as the school system, had to engage and move in the same direction and with purpose. Systemic coherence and alignment were required, with the challenge for the school system being to nurture this. Systemic coherence and alignment rely heavily on how classroom teachers, school leaders, and system leaders view the relevance of systemic school improvement in improving student achievement. This is a major area of focus for the study and in the identification of the research problem.

1.3 Identification of the Research Problem

This chapter has identified, through the international, national, and local contexts, key dynamics in the area of systemic school improvement influencing student achievement. First, systemic school improvement initiatives have been the focus of substantial government spending with results that can be described as inconsistent at best. Second, the emphasis on systemic school improvement has grown as a result of increased international, national, and local priorities on student achievement with associated accountability measures. Third, work in the field of system theory has identified some significant principles of coherence and creative adaptation that may help us understand how to influence school systems. Fourth, while research to date has identified examples of successful systemic

interventions, it has not given us Australian Catholic case studies in which a systemic school improvement approach has been tested. Finally, in the metropolitan Catholic school system, there is a perception that the growth in student achievement may be attributed to a systemic school improvement approach; until now this has not been systematically tested and explored.

Therefore, the significance of school system improvement in a specific context is discussed next.

1.3.1 The significance of the research

This study is important because it adds to the body of knowledge relating to school system improvement. There are five reasons why this study is significant:

i. **The fundamental importance of student achievement.**

Throughout the world, systemic case studies have focused on student achievement because "there are few things as important to the future well-being of our world than the quality of the education our children receive. This is an important motivator for the vast majority of the leaders of the world school systems" (Mourshed et al., 2010, p. 11). Student achievement is central to systemic school improvement and is clearly reflected in the countries' national goals and in the moral purpose for the establishment of schools and school systems.

ii. **Government expenditure on education.**

The substantial government expenditure on education has called for school systems to improve learning and assume greater accountability for student achievement. Over the past thirty years, almost every country in the OECD has substantially increased its expenditure on education (Arnett et al., 2018; Mourshed et al., 2010) and has externally mandated accountability measures.

iii. **The inconsistent track record of systemic school improvement.**

Despite substantial increases in government expenditure and well-intentioned school improvement efforts, research (Arnett et al., 2018; Mourshed et al., 2010; Schleicher, 2018) has shown that students in a large number of school systems globally have barely improved in the past two decades. Student outcomes in a large number of systems have either deteriorated or regressed or have shown only incremental improvements in student achievement. Based on the international

benchmarked data in PISA and TIMMS tests, school systems with similar education spending have widely varying levels of performance (Mourshed et al., 2010; Schleicher, 2018).

iv. **There is a need for Australian systemic school improvement case studies.**

There had been minimal research around systemic school improvement in Australia, particularly in the Catholic school system. Insights from this study have the potential to inform the policy and practice of systemic school improvement in Australia, contribute to a wider body of knowledge on school systems' influence on student achievement, and identify implications for policy, practice, and future study.

v. **Importance of system thinking.**

The importance of drawing a link between systemic school improvement and system thinking is because it can potentially inform both the policy and the practice that improves student achievement. There has always been an interest in accomplishing whole-system improvement and in improving all schools in a school system approach (Fullan, 2011). System thinking for many years has been giving school systems a direction on how whole-system improvement can be achieved. Nevertheless, recent research built on system thinking for organisations to foster the emergence of complex adaptive systems—reflecting the conditions in which school systems operate today—is important in systemic school improvement. In fostering a complex adaptive system, an understanding of system leadership has emerged. This study is also designed to identify the features of a well-performing school system and to understand how these features combine in different ways through policy and practices that impact on student achievement. Inevitably, systemic school improvement is still about the school system striving to achieve the delicate balance between the complexity of school-system-driven improvement and school-driven improvement.

1.3.2 The purpose of the research

After many years of growth in student achievement in the study of a metropolitan Catholic school system, there is a need to explore a systemic school improvement approach that appears to influence students and their learning. While the research literature identified a number of influences on student achievement, this study focuses on systemic school

improvement and student achievement. The prime purpose of this research is, therefore, to explore how a school system influences student achievement. Understanding the dynamics of the relationship between 'systemic school improvement' and 'student achievement' is at the heart of this study.

This study also focuses on identifying any implications for policy and practices that have been introduced across the whole-school system with the intention of enhancing student achievement. Finally, the study endeavours to determine how, and to what extent, key stakeholders perceive a school system influences student achievement.

1.3.3 The research question

The research question for this study originated from the significance of systemic school improvement in response to the international, Australian, and metropolitan Catholic school system context of accountability and improving student achievement. In the local context, anecdotal information has long suggested that Catholic schools are using a systemic school improvement approach, but there was no research to show how such an approach was influencing student achievement. This apparent gap led to the development of the following major research question: **How does a school system influence student achievement?**

This research question was advanced by the following sub-questions:

SQ1. How do principals, assistant principals, coordinators, and classroom teachers perceive the awareness, usefulness, and effectiveness of a systemic school improvement approach?

SQ2. How do principals, assistant principals, coordinators, and classroom teachers perceive a systemic school improvement approach as providing direction and purpose, building capacity, and adapting to sustainable improvement?

SQ3. How have High Learning Gains (HLG) and Low Learning Gains (LLG) schools adopted a systemic school improvement approach?

SQ4. How do principals of schools in either HLG or LLG schools perceive a systemic school improvement approach influencing student achievement?

These contributing questions are developed further in Chapter 2 after the literature review and the development of the conceptual framework.

The next section of this chapter gives an overview of the key terms used in this study.

1.4 Definitions

These explanations of key terms provide clear and unambiguous definitions of the language used throughout this study.

1.4.1 Metropolitan Catholic school system

A school system is a geographic district or region of schools that are administered collectively by a governing authority. The metropolitan Catholic school system is an educational agency of the Church accountable to the Catholic Archbishop through a Schools Board for the leadership and management of Catholic primary and secondary schools. In this study, the metropolitan Catholic school system, with its central and regional offices and primary and secondary schools, is viewed as a whole.

1.4.2 Catholic schools

The metropolitan Catholic school system consists of Catholic primary and secondary schools, administered by central and regional offices on behalf of the Trustees of the Roman Catholic Church. These Catholic schools are sometimes referred to as 'systemic', or a 'school system' since they belong to the metropolitan Catholic school system. They do not include the Catholic primary or secondary schools owned or operated by religious congregations or independent boards within the metropolitan Catholic school system in this study.

1.4.3 Student achievement

Student achievement can be measured in a great variety of ways; however, a major policy focus, discussed in this chapter, is by performance in external standardised tests and by analysing test data. Recognising the narrowness of this approach (Rowe, 2005), in this study student achievement referred to the state and national testing and benchmarks data achieved by students in literacy and numeracy. The literacy and numeracy test data used in this study were derived from the NSW annual Basic Skills Test for Years 3 and 5, adopted by the metropolitan Catholic School system from 1998 to 2007, through to the national annual Years 3, 5, 7 and 9 NAPLAN tests, the Year 10 School Certificate, and the Year 12 HSC from 2008.

1.4.4 School improvement

There are many definitions of school improvement and various interpretations and issues associated with school improvement as a practice (Bamford, 2007; Hopkins, 2001). However, the school improvement paradigm has two main aspects. One is about making schools

effective and successful places in which students can learn, while the other focuses on the technical aspects of educational reform. Hopkins defined school improvement as something (2005, p. 3):

> ... that enhances student outcomes as well as strengthening the school's capacity for managing change. School improvement is about raising student achievement through focusing on the teaching–learning process and the conditions which support it. It is about strategies for improving the school's capacity for providing quality education in times of change. (Hopkins, 2005, p. 3)

This definition was used throughout this study to include those approaches and strategies, collectively known as 'school improvement', that focus on creating a structure to influence the improvement of student achievement.

1.4.5 Systemic school improvement

Systemic school improvement refers both to shifting paradigms within educational change and reform efforts that broadly affect a whole-school system. Systemic school improvement was used in this study to mean a school system approach implemented by a system of schools to contribute to the improvement of outcomes for all students across all schools in that system (Hill, Tucker, & Crévola, 2003).

The intent of this study is not to evaluate a metropolitan Catholic school system approach but to identify the influence of such an approach on student achievement.

1.4.6 Building capacity

Building capacity is defined as actions that "lead to an increase in the collective power of a group to improve student achievement" (Fullan, 2005b, p. 4) and actions that enable deep and sustained learning for all within the system (Stoll, 2009). Building capacity often refers to the ability of a school system to adapt to and sustain educational change.

1.4.7 Building capability

Building capability integrates the skills, knowledge, and attitudes that a person brings to their work. It can include technical, business, personal, and professional expertise, which can be developed by formal and informal learning, observation, mentoring, guidance, feedback, lifelong experience, and reflection. In summary, building capability is defined for this study as an individual's ability to apply specific knowledge, skills and/or values to their learning and teaching practice. Building capability refers to the individual abilities and knowledge in the school system to lead educational change effectively.

1.5 Assumptions

The following two assumptions, which aimed at promoting participation in data collection and analysis, underpinned the design of this study:

i. Key stakeholders' perceptions are a valid indication of the workings of a systemic school improvement approach and its influence on student achievement. The principals, assistant principals, coordinators, and classroom teachers and a small number of senior metropolitan Catholic school system staff have the broadest experience and knowledge to provide relevant data for this study. All key stakeholders selected were assumed to be committed to the metropolitan Catholic school system policy and practices and thus able to offer high-quality data. This assumption is further developed in Chapter 3, Research Methodology and Design, where details of the research participants are given.

ii. The use of standardised test results (such as NAPLAN, School Certificate, and Higher School Certificate) is a satisfactory, if not complete, a way of measuring student achievement. While incomplete, standardised tests are, however, the key driver of state and national educational initiatives for improvement and for government expenditure.

1.6 Outline of the Study

The study has seven chapters. After this introductory chapter, Chapter 2 provides a review of the educational literature associated with whole-school system improvement and the major themes emerging for this study. The sub-questions to the research question were developed from the literature review, providing the conceptual framework for the next phase in the study design.

The research methodology is discussed in Chapter 3, which includes the justification for the theoretical framework and the research design. An explanation of the mixed-methods approach and data-collection methods used is provided, together with an outline of the data-analysis methods, and the ethical considerations and limitations of the study.

Chapter 4 discusses the development and validation of the questionnaire. Chapter 5 presents the quantitative and qualitative data analysis for the questionnaire, document analysis, and semi-structured interviews. Chapter 6 discusses the results of the research and Chapter 7 presents the key findings, implications, and recommendations.

1.7 Conclusion

This chapter provided the context for this study, the research problem, and a discussion of the study's purpose and significance.

The chapter also provided the context of school-system improvements taking place internationally, and pointed out that the approaches there are similar to what is happening nationally in Australia and in the local context within a metropolitan Catholic school system. The study indicated that there has been a significant shift from a focus on school improvement to systemic school improvement and how a school system is perceived to influence student achievement.

The study is situated within a metropolitan Catholic school system and focuses on how the school system influences student achievement. A study of this kind has policy and practical implications and so it makes recommendations for the metropolitan Catholic school system and other school systems. The study findings may also contribute to areas for future research.

The next chapter, Chapter 2, reviews the educational literature related to the research problem.

CHAPTER 2

REVIEW OF THE LITERATURE

2.0 Introduction

My study's purpose is to explore how systemic school improvement influences student achievement. This chapter reviews literature relevant to this research problem, identifying the key themes and providing a critical analysis of the emerging sub-themes for further enquiry through the development of sub-questions.

This study has been informed by the review of three areas of literature. First, lessons learned decades ago when the emphasis was on school effectiveness. Thinking has shifted this decade from system effectiveness to system improvement (Barber, 2009; Schleicher, 2018). This focus on school system improvement continues to grow as schools that are improving are influenced through systemic school improvement and finding the equipoise between a top-down and bottom-up approach to achieve school system priorities. Second, this literature review draws upon systems thinking with a focus on school system international best practice case studies and the literature on exploring organisations through a living-systems lens. Finally, the literature review identifies three themes that influence student achievement:

i. Direction and purpose;
ii. Building capacity; and
iii. Adaptability for sustainability.

These themes should be viewed as integrated and interconnected because they impact on one another and seem to permeate a school system. Each of the themes has sub-themes, which are briefly defined and described in this chapter. Following the definitions and descriptions, questions are posed to help inform the study.

2.1 Lessons from School Effectiveness and School Improvement

School-effectiveness and school improvement approaches worldwide have offered useful insights into how to influence student achievement.

From the late 1970s to the mid-1980s, the first international research studies of school effectiveness, published in England and the United States, identified the characteristics of effective schools (Purkey & Smith, 1983; Reynolds, 1976; Rutter, Maughan, Mortimore,

Ouston, & Smith, 1979; Wilson & Corcoran, 1988). While generally there was a lack of consensus among these studies on a definition of school effectiveness, there was apparent agreement that school effectiveness was about growth in student achievement and value adding. Other studies argued that effectiveness was about meeting or exceeding school goals (Degenhardt & Duignan, 2010). The concept of school effectiveness is inherently value-laden, as explained by Matheson and Matheson (2000, p. 6):

> The meaning of the term 'effective school' will depend on the discourse within which it is measured: Within the discourse of the market an effective school may be one which scores well in external examinations. It may achieve this high score partly through divesting itself of those pupils whose performance risks lowering the average examinations score. Such a school would hardly be effective in the discourse of inclusion.

Essentially, school effectiveness is identified by a top-down approach, where a school system provides external control and directions to schools to influence student achievement. Sammons (1995) and Lezotte (1991) found that school effectiveness was characterised by seven 'correlates', which constituted:

i. a safe and orderly environment;
ii. a culture of high expectations;
iii. instructional leadership;
iv. a clear and focused mission;
v. opportunities to learn by offering students more time-on-task;
vi. frequent monitoring of student achievement; and
vii. home–school relations.

These 'correlates', however, were only useful as an evaluation checklist in working to improve schools. The greatest challenge in relation to school effectiveness was determining the best school structures and practices required to achieve these characteristics. The better schools were more tightly coupled, culturally (D. Hargreaves, 2008; Murphy, 1992). The school-effectiveness approach sought to change the organisational conditions within the school.

School effectiveness literature, with its narrow focus on measurable variables of student achievement and its reference to effective (good) and ineffective (bad) schools (Reid, Hopkins, & Holly, 1987; Stoll & Reynolds, 1997), was limited by operating within a strong values tradition and a vision of a more desirable position for schools to be in, rather than on

how to get to that position (Degenhardt & Duignan, 2010). Although the late 1970s to mid-1980s was a creative phase, which provided an understanding of the educational change process and the characteristics of effective individual schools, it did not provide agreeable conditions to improve the quality of education and student achievement (Fullan, 1991). School-effectiveness research in managing educational change proved to be difficult to translate into successful practice. It struggled to transmit the research knowledge and strategies to the daily realities of schools in a way that was practical and systematic. The global evolution of the systemic-improvement approach was regarded as more helpful for schools in influencing student achievement and so it oversaw the emergence of a new phase in educational change called 'school improvement'.

School improvement has many definitions and various interpretations (Hopkins, 2013). The OECD-sponsored 'International School Improvement Project' has provided a much-quoted and generally accepted definition of school improvement as:

> … a systemic, sustained effort aimed at change in learning conditions and other related internal conditions in one or more schools, with the ultimate aim of accomplishing educational goals more effectively. (Van Velzen, Miles, Ekholm, Hameyer, & Robin, 1985, p. 48)

The essential differences between these two approaches—school effectiveness and school improvement—are summarised in Table 2.1 (Bottery, 2001, p. 155; Fidler, 2001, p. 65).

Table 2.1 The differences between school-effectiveness and school improvement research

School-Effectiveness Research	School improvement Research
1. A focus on outcomes	1. A focus on process
2. A focus on comparative evidence	2. A focus on the individual school context
3. Single-factor focus	3. Multi-factor focus-system, school, teacher, student
4. A broad-based approach	4. A fine-grained approach
5. Data for reflection and decision-making	5. Data for action and development
6. Cross-sectional approach	6. Longitudinal/evolutionary approach
7. Quantitative orientation	7. Qualitative orientation
8. Academics are researchers	8. Practitioners are the researchers
9. Scientific research approach	9. Action research approach
10. Systems model—top-down approach	10. School model—bottom-up approach

The school improvement approach has two main facets: making schools effective and successful places in which students can learn and improve; and building schools' capacity to lead educational change. It is a distinctive approach

> ... that enhances student outcomes as well as strengthening the school's capacity for managing change. School improvement is about raising student achievement through focusing on the teaching–learning process and the conditions which support it. It is about strategies for improving the school's capacity for providing quality education in times of change. (Hopkins, 2005, p. 3)

This definition highlights the importance of school improvement as a process of changing school culture, where the core beliefs, values, traditions, symbols, and the way things are done shape the direction of a school community (Fullan, Rolheiser, Mascall, & Edge, 2005; Sergiovanni, 1996). The school is seen as the centre of educational change and classroom teachers as fundamental in influencing student achievement. This suggests that for school improvement to occur classroom teachers need to be committed to the process of educational change and self-review, which involves them reflecting on and changing their own instructional practice. Reviews of school improvement over the past two decades suggest that it has evolved in phases as educational practitioners and researchers have gained experience in implementing and learning about educational change (Hopkins et al., 1997; Hopkins (2001).

The school improvement approach evolved through three distinct phases (Chrispeels & Harris, 2006; A. Hargreaves & Shirley, 2009). These phases are not completely unrelated, and tend to overlap and connect with one another:

- **Phase 1: During the 1980s** – focused on individual schools, student groups or teachers, and action research. The key features of this phase were teacher research and school review, but it was exemplified by the OECD International School Improvement Project (ISIP).
- **Phase 2: Early 1990s** – focused on the classroom as well as the school in managing educational change, with an emphasis on the importance of leadership. The key feature of this phase was a comprehensive approach to school reform.
- **Phase 3: Late 1990s early 2000s** – focused on a period of program and project refinement and on scalability of educational initiatives. The key feature of this phase was building capacity at the school level through professional learning communities and collaborative networks, with a shift from teaching to learning and to adopting systems thinking.

Degenhardt and Duignan (2010) identified drawbacks to the school improvement movement such as a failure to adopt educational research, an over-emphasis on practitioners' intuitive

knowledge, and the fact that improvement in schools would not occur where teachers were not intrinsically motivated, or did not have the required competencies to engage in school improvement.

Internationally, good insights were presented by the school-effectiveness and school improvement approaches to educational change. Both approaches operated in an understanding of the school context. However, from the early 1990s, research literature called for links between school effectiveness and school improvement. It was argued that

> if practitioners can see and make links between school effectiveness and improvement, surely researchers studying the two areas can do the same and to work with schools to develop a deeper and more meaningful understanding of the research and its implications for practice. (Stoll, 1996, p. 31)

This thinking has led to school effectiveness and improvement research working more closely together.

Both approaches have been evaluated over the years and a significant evidence base exists to support their encouraging impact on schools. Research projects in many countries have proved to be highly effective because schools have actively sought to match the improvement needs of the school with the particular approach or school improvement program (Crandall, Eiseman, & Louis, 1986; D. Hargreaves, 1984; K. Louis & Miles, 1990; Rosenholz, 1989). In many respects, the ISIP—coordinated by the OECD and involving fourteen countries from 1982 to 1986—laid the cornerstone (Van Velzen et al., 1985). The ISIP recommended a different way of thinking about educational change in contrast to the top-down approach of the 1970s. The school was placed at the centre of educational change and the ISIP's long-term goal was to move schools towards self-renewal and growth with a bottom-up approach where school improvement was owned by the schools and internally driven (Stoll & Reynolds, 1997). This bottom-up approach emphasised the importance of looking at educational change through school improvement approaches and from many levels and perspectives (Fullan, 2000, 2008; Joyce, 1993).

Other extremely successful international school improvement programs from the 1990s included the Canadian Halton Project (Stoll & Fink, 1996), the Accelerated Schools Project (Levin, 1998), and approaches to restructuring in the USA (Elmore, 1995). All these projects placed schools at the centre of educational change and engaged them in the practice of school renewal and planning. In addition, attention was given to the development of

decision-making structures and building collaborative practices within schools (Stoll & Fink, 1996).

Another significant international school improvement project called 'Improving the Quality of Education for All' (IQEA) similarly focused upon building collaborative practices in schools. As one of the most successful school improvement projects in England, IQEA was premised on the view that "without an equal focus on the development capacity or internal conditions of the school, innovative work quickly becomes marginalised" (Hopkins, Harris, & Jackson, 1997, p. 3). Fundamentally, IQEA is a model of school educational change that is premised upon facilitating change within schools (Harris, 2000). It is not prescriptive in terms of what schools actually do, but does define the parameters for improvement. IQEA is research-driven. It not only encourages schools to adapt the model to their particular needs and context, but also to utilise the research concerning effective teaching and learning.

The 'Schools Make a Difference' project in London (Myers, 1996) and the 'Success for All' project (Slavin et al., 1996) stand out as two case studies that have adopted a highly effective approach to school improvement. These contrast with the USA's 'No Child Left Behind' program (Yell & Drasgow, 2005) and inspections by the United Kingdom's Office for Standards in Education (OFSTED), which have focused on widely published school-performance indicators as key drivers for initiating whole-school improvement. The result is the well-publicised 'league tables', which publicly compare schools for the stated purpose of improving parental choice for the education of their children. However, the efficacy of school-performance comparisons has been challenged on many occasions by researchers who question the loose linkages between inspection for accountability and school-driven improvement as a means of influencing student achievement (Fullan, 2009; Gray, 2001; Rowe, 2000). The 'one size does not fit all' approach, on the other hand, allows individual schools autonomy and the flexibility of determining how they will assume responsibility for maintaining quality and continuing improvement in the absence of any school-system direction that is less than effective (Hopkins et al., 1997, p. 8).

Sergiovanni (1996, p. 2) cited Fullan (1994) that neither top-down strategies nor bottom-up approaches have worked well as schools did not make significant educational changes to teaching practice because of existing norms of teacher autonomy and therefore there was little evidence of better student achievement. Governments tend to prefer a top-down approach (Barber, 2009) but a top-down approach often fails (Bishop & Mulford, 1999).

However, research does not suggest a withdrawal of "the traditional 'top down' approach but advocates instead for a balance of 'top down' direction and school 'bottom up' approach" (Fullan, 1993, p. 37). Fullan (1993) argued that exceeding the top-down approach through control can preclude innovation and creativity, and an emphasis on a bottom-up approach can lead to confusion, both of which are likely to produce problems to any school improvement. The balance between top-down and bottom-up has led to 'leading from the middle' thinking, which releases schools and classrooms to become engaged in purposeful system educational change, and eventually to own the changes they create together (Fullan, 2015). Responding to the weaknesses of school-effectiveness and school improvement approaches, emerging research now appears to be focused on school system improvement as a way of exercising influence on student achievement.

2.2 School System Improvement

In summary, nearly two decades of school-effectiveness and school improvement research had focused on lateral structures, i.e. the different levels within the system—for example, the classroom and school in addressing school improvement—and ignored the part school systems can play in school improvement. Government accountability focused on both individual schools' and school systems' call for a shift from thinking of schools on a one-by-one basis. Therefore, government accountability requirements made school systems more promising for sustainable school improvement. It has become increasingly clear that the role of school systems to influence student achievement within systematic school improvement is vital (Mourshed et al., 2010). Hopkins (2013) traced the early attempts of system improvement by citing case study research through three phases: pre-1997; 1997 to 2002; and 2003 to 2013.

As mentioned in Chapter 1, recent research in the international context has highlighted several countries where systemic school improvement is underway (Barber & Mourshed, 2007; Barber & Mourshed, 2009; Mourshed et al., 2010; Schleicher, 2018). This emergent trend recognises the increasing appreciation of the connected nature of individual schools in systems and the need to share those school improvement practices that influence student achievement across the school system. Essentially, systemic school improvement has challenged and also supported schools and reinforced and leveraged their work. If an unrelenting focus on student achievement is to be the focus for schools, then this needs to be the purpose of systemic school improvement. If leadership development in the school

and in the classroom is to be acknowledged as a major emphasis, then it also needs to be provided by the school system. Therefore, alignment between the classroom, the school, and the school system to build coherence is required (Fullan & Quinn, 2016). In addition, systemic school improvement is now about redefining the role and work of school systems in an attempt to find the appropriate balance between top-down and bottom-up approaches that would achieve the national educational priorities. The language of 'top down' and 'bottom up' is being used because of its currency in the field, even though, as will be demonstrated, the types of relationships within school systems are far more complex. Research (Marsh, 2000; Murphy & Hallinger, 1988) has acknowledged the subtle balance required between systemic authority and school autonomy with some successful school systems setting clear direction accompanied by decentralised responsibility. The quest for the appropriate balance between 'top down' and 'bottom up' school improvement approaches has given rise to a greater appreciation of complexity within school systems — 'complexity' being concerned with the non-linear and dynamic behaviour of individuals that may affect related individuals but will not necessarily have an equal or uniform impact (M. J. Wheatley, 1999). School systems face difficult and complex choices with any educational change and are required to weigh up any potential impact against the economic and political cost of change (Schleicher, 2018). The key principles of complexity require connectivity and interdependence, which can offer an enabling approach that works between the classroom, the school, and the school system.

From my review of the literature, it advocates various roles and responsibilities that school systems might undertake in support of school improvement. These responsibilities fall into several critical positions relating to the classroom, the school, and the school system and their inter-dependency and inter-connectedness (Jansen et al., 2011). These connections beyond the immediate context of the classroom, the school, and the school system are the cornerstone of systems thinking. System thinking is seen as 'wholes rather than parts', as discussed in Chapter 1 (Section 1.1.2). System thinking provides a framework for seeing the interrelationships and interconnectedness that give living systems their distinctive appeal, especially during complex times and working within the complexity of the organisation (Senge, 2006).

Systems thinking concludes that all members of the school system must be connected—they must work cooperatively with one another, developing collaborative networks to learn from

one another for continued improvement—and it is the school system's responsibility to enable these opportunities (Harris, 2010). The relationship between the school, school system, and government is known as a tri-level vertical structure approach, which has been written about by Fullan (2010) since the 1990s. This vertically structured approach has been designed with the intention of connecting those who work at different levels of the school system. The tri-level model supports a tightly coupled system concept and proposes improving student achievement through achieving deeper and sustainable improvement in student learning at three different levels (Barber & Fullan, 2005). My study has mapped itself against this tri-level vertical structure by defining the levels as the Catholic classroom, Catholic secondary school, and the metropolitan Catholic School system, which illustrates systems thinking in a simple concentric circle (Figure 2.1).

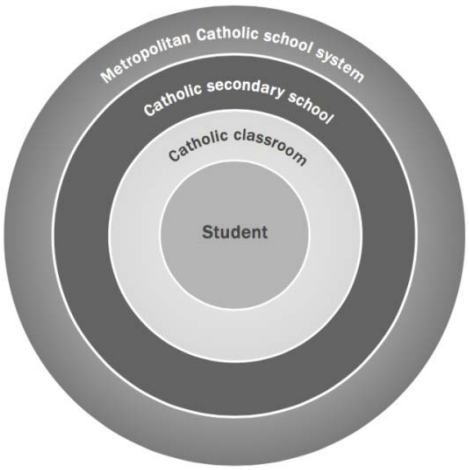

Figure 2.1 Tri-level vertical structured approach to systemic school improvement

The logic behind this strategic tri-level, vertically and horizontally connected approach is to build collective capacity and develop system leaders who collaboratively network across the school system (Harris, 2010). Fullan (2006) believed that within a system schools must work cooperatively with one another in order to learn from each other and motivate one another for continuous and sustained school improvement. This collaborative approach depends on a deep and shared understanding of the school system's direction and purpose, values, strategies, and interventions, from the classroom, the school, and the school system which leads systemic school improvement (Mourshed et al., 2010; Schleicher, 2018). Examples of vertically connected structures as a tri-level approach are evidenced in the school systems of Ontario and Wales (Harris, 2010) with alignment across all levels of the school system through collaboration practices as the central purpose of their work. This has implications for policy, practice, and further research on how the different levels connect, relate,

communicate, and enable practices for systemic school improvement that influence student achievement.

Two bodies of literature have informed this study; one focused on school system best practice case study research (Barber & Mourshed, 2007; Barber & Mourshed, 2009; Mourshed et al., 2010; Schleicher, 2018) and the other on emerging literature exploring organisations through a living-systems lens (Jansen et al., 2011; M. Wheatley, 1999; M. J. Wheatley, 2006).

2.2.1 School system best practice

School system best practice case studies draw on the experiences of a number of international school systems. One characteristic of a best-performing school system is that it recruits great people to teach and train them well. This is based on the view that the best school system cannot surpass the quality of its classroom teachers (Arnett et al., 2018; Barber & Mourshed, 2007; Schleicher, 2018). Fullan's work since the 1990s, and that of Barber and Mourshed (2007) and Schleicher (2018), has provided additional evidence from the world's best-performing school systems. This evidence can be summarised in terms of three key characteristics:

i. School systems create opportunities where classroom teachers constantly improve their classroom practice to improve student improvement.
ii. School systems create a learning culture which ensures that every student reaches their potential. This relies on data to inform the learning and the teaching.
iii. School systems understand that school leadership is a key enabling factor to improving student achievement.

Barber and Mourshed (2009) and Schleicher (2018), building on Fullan's work, helped move attention from an individual school to the school system. Both argued that systemic school improvement required:

i. School systems developing leadership at various levels to ensure ever-widening circles of leadership.
ii. School systems monitoring proactively contending agendas and distractors to ensure a continuous focus on goals.
iii. School systems researching and evaluating strategies to ensure that results are transparent and that effective practice informs further action.

iv. School systems conducting learning conversations which are constant, open, and two-way within, and beyond with the public.

Building on Barber and Mourshed's original McKinsey report in Barber and Mourshed (2007), Mourshed et al. (2010) categorised school systems according to starting points and progression and in turn explored their performance level according to system intervention and given contexts. This more recent report examined twenty school system case studies where student achievement began at different levels. These were:

i. 'poor to fair', where systems were focused on achieving the basics of literacy and numeracy;
ii. 'fair to good', where the emphasis was on getting the data and accountability foundations in place;
iii. 'good to great', with an emphasis on the leadership of principals and teachers; and
iv. 'great to excellent', paying attention to improvement through peer-led learning for principals and classroom teachers.

In these case studies, improving student achievement was a major responsibility of the school system. In each case study, all best-performing school systems, even if their starting point was low, were led by leaders who were self-aware and involved in what a McKinsey report called "a system thing" (Mourshed et al., 2010). This was where a minor number of critical features go together to generate systemic school improvement. The report concluded that the following elements were common across the school system case studies:

i. Interventions occurred at different levels of school performance, starting with low-performing schools and moving to those schools that had already had high-performance success.
ii. Pathways were determined by the school context.
iii. Collaboration ignited school system change.
iv. Systemic school improvement strategies had achieved breakthrough.
v. Systemic interventions had built ever-increasing momentum.
vi. School systems sustained school improvement.
vii. School systems were able to journey to the next stage of improvement.

Reflecting on school system literature, two points emerge as critical in understanding systemic school improvement. The first is the move from a school-focused to system-focused improvement approach; and the second is that it is possible to learn about

improving school systems by learning from other systems. Hopkins et al. (2011) suggested the key to leading systemic school improvement was strategically re-balancing 'top down and bottom up' approaches to educational change over time. This view gained support from research by Barber (2009), who discussed a move from system effectiveness to systemic school improvement. It also was supported by Fullan (2009), who reflected on large-scale educational change coming of age, and Hargreaves and Shirley (2009), who argued for a "fourth way of change" that offered an inspiring new vision leading to remarkable improvements in student achievement and embracing moral purpose, professionalism, and coherence. The key question still remained, though: 'How do we get there?' The guiding thinking to answer this question appears to lie in both the school's and the system's ability not simply to balance the 'top down and bottom up' approach to educational change, but also to reach beyond this linear reasoning over time in the quest for sustainable student achievement (Hopkins et al., 2011). In dealing with the complexity of educational change to either sustain or improve student achievement, this reaching beyond linear reasoning involves using systems theory, which builds collective behaviour in organisations (Harris, 2010).

2.2.2 Organisations through a living-systems lens

The second body of research that guides systems thinking explored school systems through a living-systems lens, viewing them as complex adaptive systems generally found in the natural world. A living system was seen as an exposed, self-organising system that interacted with its living environment (Jansen et al., 2011). A living system can be defined as how all living systems work, about how they maintain themselves and how they develop and change. Wheatley (2006) presented the idea that organisations should be viewed more like complex living systems that have the ability to adapt in response to vagueness, complexity, and ambiguity. School systems are complex organisations and yet some research gives the impression that it is simply a case of following a set of procedures. Systems, of any kind, are seldom that straightforward, and Pryor and Bright (2013) provided a broad understanding of the application of 'chaos theory' to the operations of an organisation and systems generally.

For example, the collective behaviour of many living species is not foreseeable nor is it disordered (Jansen et al., 2011). Birds that flock in thousands do not behave confusedly; there are patterns to their flying such that they move with purpose and in one direction, yet do not collide with one another (Jansen et al., 2011). Another example relates to how

honeybees solve the problem of finding and exploiting the best food sources. Sergiovanni (1996, p. 42) argued that

> Bees are self-managing, and together comprise a network of individual actors that act independently and yet in unison, without guidance from any central control. They are not a mere collection of individuals engaged in parallel play, but are tied together somehow into a colony of individual actors engaged in common purposes. (p. 42)

In the natural world, self-organising behaviour through decentralised control is common, and creates a different patterned response to a danger or opportunity, which is referred to as 'emergence' (Jansen et al., 2011). UhlBien and Marion (2008) introduced the notion of emergence as 'complexity thinking', which was "the study of the dynamic behaviours of complexity interacting interdependent and adaptive agents under conditions of internal and external pressure" (p. 3).

This notion of complexity thinking has led to viewing organisations as complex adaptive systems where all individuals work independently to perform in ways they themselves determine. Individuals have no fixed roles or responsibilities but are able to initiate and create different roles that respond to change and adapt, as in our example of a flock of birds (Jansen et al., 2011) and a colony of honeybees (Sergiovanni, 1996). In a complex adaptive system, independent actions are interdependent on others' actions, so that one individual action can influence the context of other individuals rather than be centrally controlled. In complex adaptive systems, control is based on relationships where individuals are enabled to act and think in association with the opportunity to contribute ideas to the constant process of adapting and learning. Interdependent practice in a system is about "moving from doer to enabler" (Sharratt & Fullan, 2009, p. 46) wherever possible. Such conditions are described as neither 'too loose' nor 'too tight' (Jansen et al., 2011), allowing sufficient space for creativity and innovation yet providing a fine balance between coherence and randomness. This enabling condition embodies the 'systems' way of thinking about 'top down' and 'bottom up'. Complex adaptive systems see interdependence relying more on coherence than central control (Fullan & Quinn, 2016; Jansen et al., 2011) and calling for alignment where individuals in the school system must be engaged and travelling in the same direction with a purpose. The key to alignment is two-way interaction where individuals engage within and across the system for the "co-construction and co-production of new knowledge" (Harris, 2010, p. 200). It seems that one of the key distinctions between

complex adaptive systems in 'top down' and 'bottom up' thinking is that the drive is internally, organically, and interactively generated.

Human systems can draw on complexity thinking and have the capability to self-organise towards a shared direction and purpose. This is especially important in the highly complex world of the twenty-first century, which is characterised by uncertainty and unpredictability (Jansen et al., 2011). Rapid advances in technology, the ability to connect and network globally, concerns regarding terrorism, climate change and political uncertainty, and global financial recession are external pressures on organisations requiring them to change and adapt so they can adequately engage with such change and continue to improve. Such complexity in society can easily undermine confidence and responsibility regardless of individual talent, creativity, and innovation because individuals are unable to pull their diverse talents into a productive whole (Senge, 2006; UhlBien & Marion, 2008). The living-systems literature has enabled a better understanding of systems thinking in fostering the emergence of adaptive, innovative, and creative organisations that can readily adjust to the complex and changing conditions in which they work.

School systems can draw on the learning from living systems as they respond to external pressures for school improvement and accountability (Sergiovanni, 1996). They can do this by establishing modes of operation that facilitate self-organisation and innovation in new adaptive structures for sustainability (Jansen et al., 2011). There is an emphasis on the stakeholders in school systems as needing to constantly learn, adapt and build capacity in response to ongoing educational change (Mourshed et al., 2010). A living-systems view can also provide some guidance as to a system improvement that enhances emergence.

A school system's role is to determine the factors that combine best to guide collective behaviour (Jansen et al., 2011, Harris, 2010). Consequently, a school system that seeks to enact these understandings should move from doing, to enabling the conditions to build collective capacity in the organisation and to promote coordination within structures (Sharratt & Fullan, 2009). This has contributed to the emergence of a form of school improvement that is "systematic, self-sustaining and unstoppable" (Sharratt & Fullan, 2009, p. 92), hopefully without losing strategic direction or getting out of control (UhlBien & Marion, 2009). As a result of viewing organisations though a living-systems lens, the research (Jansen et al., 2011) on a complex adaptive system would suggest that school systems should engage in proactive coaching and mentoring of individuals, foster engagement and

shared learning, distribute power and decentralised control, and explore and articulate shared values, all of which tie well into system thinking.

The literature that focuses more specifically on systemic approaches to school improvement can be understood as belonging to three key themes and eight sub-themes, which are noted below and discussed in this chapter. The themes, which interrelate, are:

i. Direction and purpose;

ii. Building capacity; and

iii. Adaptability for sustainability.

2.3 Theme 1: Direction and Purpose

The research by Chrispeels and Harris (2009), Barber and Mourshed (2007), Mourshed et al. (2010), Jensen et al. (2012) and Schleicher (2018) on successful school systems suggested that establishing a clear direction and purpose was the key to supporting systemic school improvement and was a major role and responsibility for school systems. It found that articulating a clear purpose and setting direction helped systems to be more focused on accepting and implementing systemic school improvement strategies. Wheatley (1999) added to this notion of purpose by identifying key principles for how living systems self-organise and change in order to create a barrier between themselves and decay through lack of direction, in this way maintaining both unity and diversity. The living system was defined by shared interests and discovering what was meaningful. We began to recognise that if there was enough shared interest that was meaningful, we could form a system with direction and purpose. Therefore, the sub-themes 'vision and mission' and 'moral purpose' are at the centre of this theme and the importance lies in the way they connect with and inform a systemic school improvement approach.

2.3.1 Vision and mission

Successful school systems create a shared vision and mission (Campbell-Evans, 1993). A vision is a specific destination, an articulated desired future that captures the seminal purposes of an organisational system, which is an expression of its moral purpose (Allen & Kern, 2018; Halsall, 1998; Senge, 2006). The vision should define what the organisation aims to be, not what it is (Davies, 2011), and be expressed in such a way that it will encourage and influence individuals of a school system to work towards living and giving witness to a values-driven vision (Duignan, 2007). The literature (Huffman, 2003) also indicates that this

vision needs to be frequently shared throughout the school system. Equally, the lack of a clear vision and mission has been shown to lead to low morale, confusion, and ineffective school improvement (Allen & Kern, 2018; Duignan, 2007). A vision should project a compelling story, ambition, and hope for the future.

If the vision is a view of what the organisation can be in the future, the mission is its task now and so is somewhat more focused (Limerick, Crowther, & Cunnington, 2002). Based on this premise, each person does not necessarily need to share a common vision, as long as they share a common mission (Block, 1993). Gerald Grace (2010) argued that a Catholic approach to school improvement research can involve using mission statements as an evaluative framework against which to assess student achievement. Catholic education can claim to have been one of the discoverers of the concept of an education mission statement; therefore, Grace (2010) proposed that it would be entirely appropriate for a Catholic school to be assessed and evaluated in terms of its mission integrity. Mission integrity has been defined as the "fidelity in practice and not just in public rhetoric to the distinctive and authentic principles of a Catholic education" (Grace, 2010, p. 8). The principle of mission integrity applies to systems thinking to ensure that at all levels, the classroom, the school, and the system practise what is valued so that mission integrity does not reside at only one level, particularly at the school level, as in the past.

The challenging notion "the value of values" (Schleicher, 2018, p. 245) has always been central to education. Schleicher (2018) claimed that it was time to move from implicit aspirations to explicit education goals and practices in ways that help communities shift from situational values to sustainable values that generate trust, social bonds, and hope.

The vision and mission thinking of any organisation is important to ensuring a unity of purpose because, "without systems thinking, the seed of vision falls on harsh soil" (Senge, 2006, p. 12). Whether they are labelled as shared, whole-school vision and goals (Cuttance, 2003) or are in response to community values (Andrews & Lewis, 2004), school systems need to create a shared vision that includes a set of agreed outcomes (Barber & Mourshed, 2009) that lead to influencing student achievement.

2.3.2 Moral purpose

After decades of educational change few school systems have been able to improve student achievement as a whole (Fullan, 2010; Mourshed et al., 2010; Schleicher, 2018) or align their

efforts to the moral imperative of deep and sustained student achievement (Hargreaves & Shirley, 2009; Mourshed et al., 2010). In the literature, one of the fundamental necessities for bringing about school improvement that would deliver desirable student achievement is moral purpose (Bezzina, 2010; Hopkins, 2013; Hopkins & Higham, 2007). Barber and Fullan (2005) saw moral purpose as the link between systems thinking and sustainability, meaning that it was not possible to move substantively towards sustainability in the absence of a widely shared moral purpose. Hargreaves and Shirley (2009) contended "that a compelling and inclusive moral purpose steers a school system, binds it together, and draws the best people to work in it" (p. 70).

Bezzina (2013) shared a definition of moral purpose by the National College of School Leadership (2006), describing it as "a compelling idea or aspirational purpose, a shared belief (that a team) can achieve far more for their end users together than they can alone" (p. 3). For example, the moral purpose of a school system might be framed like this:

> The central moral purpose consists of constantly improving student achievement and ensuring that achievement gaps, wherever they exist, are narrowed. In short, it's about raising the bar and narrowing the gap. (Barber & Fullan, 2005, p. 33)

The issue of moral purpose has been raised, while acknowledging that purpose may change between locations and over time due to national educational goals. It is remarkable that while leaders declare passion for education and have a compelling moral purpose (Caldwell & Harris, 2008), passion by itself may amount to nothing if the staff do not have a shared moral purpose at the centre of their teaching. Loss of trust has been a key theme in dialogue on leadership, pointing to the reality that purpose and passionate leadership are ineffective if they do not engender relational trust (Caldwell & Harris, 2008).

A large proportion of the literature and research touching on moral purpose is situated within the school; nevertheless, the concept in this study extends the idea to school systems, in which the work has been much more conceptual. However, it is important for a shared sense of purpose to be grounded in a commitment to explicit values (Andrews & Lewis, 2004; Schleicher, 2018), and this requires clarity in the way the purpose is understood and the values that underpin it. A shared moral purpose has been constantly recognised in the literature as something that will deliver desirable student achievement in schools (Bezzina, 2008, 2010, 2013). A shared moral purpose underpins school improvement, but it needs to be explicit through a consistent use of language (Bezzina, 2010). Fullan believed (quoted by

Sergiovanni, 1996, p. 17) “that real reform will come about as a result of individuals with a clear moral purpose working together on issues that are meaningful to them”.

According to (Caldwell & Harris, 2008), the challenge, therefore, was to discover an approach that raised the understanding of a shared moral purpose so that it could be entrenched in practice and had integrity within the wider school community and across the system. Moral purpose is an important factor in bringing about improvement across a school system, but there is little evidence about how this might be done because most of the research has been done in individual schools. In particular, if a school system has a clearly articulated shared moral purpose to improve student achievement, the members of the school system become vital in delivering the systemic vision and mission to the school community. One of the six ‘secrets of change’ that apply to all organisations, regardless of sector, is to “connect peers with purpose” (Fullan, 2008, p. 39).

Vision, mission, and moral purpose have too often been seen as individual phenomena that do not necessarily lead to sustainable school improvement (Fullan, 2005a). Leading school systems have recognised this problem and called it the ‘moral imperative’ (Fullan, 2003). An earlier definition of moral purpose saw it as being about commitment—a commitment to making a positive impact on students so they will learn, a commitment to treating people ethically, and a commitment to improving the school system, not just one’s own school (Fullan, 2005a).

In summary, a mission statement succinctly defines a school system’s reason for existence: its fundamental purpose. Any school system that attempts to operate without a mission statement runs the risk of drifting through society without having the ability to verify that it is on course. A vision should complement and enhance a school system’s mission by providing a statement of where it expects its purpose will lead. In essence, it represents a clear statement of what and where the school system wants to be. It describes what the school system hopes to be in the future. It is a long-term, lofty goal that sets the tone for higher achievement within the school system. A school system’s values can be described as operating principles that guide internal conduct as well as the school’s relationship with society. Consequently, mission statements describe what the school system currently wants to achieve and vision statements express where it hopes to be in the future. The purpose of stating values is to help define the type of school system it is striving to become. Therefore,

the vision, mission, moral purpose and values say something about the culture and ambitions of a school system. They represent the 'how', the 'what', and the 'where'.

Hence, the following questions informed this study:

- How do we connect the classroom, the school and the system to a systemic vision, mission, and purpose?
- How does the school system connect its members with a shared moral purpose?
- How do policies and practices give direction and purpose?

2.4 Theme 2: Building Capacity

Capacity is defined as the potential to engage in and sustain approaches and practices focused on a purpose (Stoll, 2009). In an educational context, capacity building is defined as practices that "lead to an increase in the collective power of a group to improve student achievement" (Fullan, 2005a, p. 4) and actions that enable deep and sustained learning for all within the system (Stoll, 2009). Building capacity is a long-term and continuous process involving all within the system context and it "synergises three things: new skills and dispositions; enhanced and focused resources; new and focused motivation or commitment" (Fullan, 2005a, p. 4). Furthermore, building capacity is a reflective practice that contributes to improving teaching and it is a shared experience that promotes collaborative approaches and collective commitment (Many, 2012). Subsequently, building capacity seems to be an important step forward in educational change and student achievement.

Building capacity is often used interchangeably with building capability. While both are important for any improvement to occur, they are different concepts. Building capacity refers to the ability to adapt to and sustain change effectively. Building capability refers to the ability and knowledge required to lead educational change effectively. Individuals may be perfectly capable of completing a task, but may not have the capacity to do so. In the context of my study, building capacity will refer to a school system's ability to effectively adapt to and sustain educational change, which can only be achieved if individuals in the school system have the capability.

Building capacity in school systems means constantly developing leadership for the future (Fullan, 2005). It is an enabling action towards a particular purpose, focused on enabling deep and sustained learning for all, with the intention of developing an adaptable and sustainable culture of learning within the school system (Fullan, 2004; A. Hargreaves & Fink,

2009). Fullan et al. (2005, pp. 10-11) argued “there is no chance that large-scale reform will happen, let alone stick, unless capacity building is a central component of the approach”. Harris (2010) maintained that to build capacity required new ways of thinking, connecting, and working and indeed “new ways of being” (p. 198). The research on school system best practice (Jensen, 2012; Mourshed et al., 2010; Schleicher, 2018) and living-systems research (Jansen et al., 2011; M. J. Wheatley, 2006) identified building capacity at the individual and collective level. In both cases, building capacity focused on effective leadership as central to successful school systems. Building individual capacity and building collective capacity are at the centre of this theme to illustrate their importance throughout the school system in influencing student achievement.

2.4.1 Building individual capacity

The school improvement phase of the past two decades has put great emphasis on the role of school leadership (Pont, 2008). This is because school leadership has been perceived as important and has been the subject of many research studies (Barber & Mourshed, 2007; Elmore, 2006; Pont, 2008; Silins & Mulford, 2007; Walker, Hallinger, & Qian, 2007). It was beyond the scope of this study to cover the vast range of theories and insights in the literature on school leadership. However, it can be said that a school system that builds individual capacity for school leadership is particularly important in systemic school improvement and leading educational change (Barber & Mourshed, 2007).

Certainly, there is a strong belief that the quality of leadership in a school is an important factor in raising student achievement, and at the heart of any school improvement is a new manner for school leaders and classroom teachers to work together (Marzano & Waters, 2009; Moos & Huber, 2007; Murphy, 2007; Silins & Mulford, 2007). All school staff members are leaders and decision-makers as they try to bring about educational change in a school improvement culture. Fundamentally, school improvement requires a reconceptualisation of school leadership where principals and classroom teachers engage in shared decision-making and risk-taking. The emphasis here is on bottom-up transformational leadership in school improvement work, rather than top-down delegated work. As Reynolds (2008, p. 1) stated, “indeed, there is not an effectiveness study worth the name that does not show the leadership of the school as one of the keys to effective schooling”. It is the leader’s capacity to build a learning culture through a cooperative and dynamic exchange between staff that is crucial (Moos & Huber, 2007). To build individual capacity, school systems must focus on

both principal leadership capacity and the leadership capacity of all other classroom teachers. This focus should address not only leadership contributions within the school, but those that contribute at the wider system level. Attention in the next sections turns first to building principal capacity, followed by building teacher capacity.

2.4.2 Building principal capacity

The literature showed that after the classroom teacher the principal has the next most significant impact on student achievement (Fullan, 2018; Reeves, 2008; Robinson, Lloyd, & Rowe, 2008). A principal's responsibility should ensure that every classroom teacher goes into every lesson with the required pedagogy to teach a lesson well to every student in that class. The principal within the school is often seen as an instructional leader, with a clear and crucial understanding of the dynamics within the school and the capacity to build a learning organisation (Huber & Muijs, 2010). Hence, the role of the school system is to enable and build a principal's capacity in every school to create those circumstances that promote learning and teaching and hold the school accountable for student achievement (Fullan, 2001). Where schools succeed, school leadership should be celebrated, and where a school is struggling or underperforming, it should be both challenged and supported through direct intervention (Barber & Mourshed, 2009).

Barber and Mourshed (2007) and Jensen (2012) saw the current challenge for school systems as being focused on the principal as the instructional leader to make things happen within individual classrooms, but in general, "school leaders can play major roles in creating the conditions in which teachers can teach effectively and students can learn" (Dinham, 2008, pp. 263-275). Principals, like teachers, have overlapping fields of impact and it is through instructional leadership that they create the conditions for learning that positively influence teachers' and students' achievement. Leithwood and Riehl (2003) concluded from a review of the school leadership literature that leadership capabilities were important and related to variations in student achievement. In schools that show impressive student achievement gains, the school leaders maintain a clear and consistent focus on improving the teaching and learning. If teachers

> ... do not have the opportunity to see their leaders functioning as leaders of learning, then we cannot expect them [teachers] to do it. (Hayes, Christine, & Linford, 2006, p. 3)

A very significant piece of research confirming just how crucial school leadership is for improving student achievement comes from New Zealand (Robinson, 2007; Robinson et al., 2008). An international examination of the research on the relationship between school leadership and student achievement found that the popular 'transformational leadership' of "inspiring staff through a vision which energises and encourages them to work collaboratively towards a common goal" (Robinson, 2007, p. 39) had three times less impact on student achievement than 'instructional or pedagogical leadership' that entailed "close involvement of leadership in establishing the academic mission and a school culture and routines which are supportive of that mission" (p. 42). This important distinction takes us beyond rhetoric and into practice.

Robinson (2007) conducted further studies on the various dimensions or practices of school leadership that influence student achievement and concluded that a principal's top five practices, in terms of effect on student achievement, were:

i. promoting and participating in teacher professional learning;
ii. establishing goals and expectations;
iii. planning, coordinating, evaluating teaching and curriculum;
iv. resourcing strategically; and,
v. ensuring an orderly and supportive environment for all.

These five practices challenge current understandings of how principals affect student achievement, especially the practice that identifies not only the promotion of teacher professional learning, but also principals' leading of professional learning, which has the largest effect. While school leadership remains the second most important influence on student achievement, after the classroom teacher, there are clear implications for school systems to build the capacity of principals, including, but not limited to, the research finding that the more closely school leaders are involved with teaching and learning, the more likely they are to make a difference to student achievement.

Similar findings were confirmed in an Australian study, in which Dinham (2008) explored how school leaders acted to promote quality teaching and student achievement in 38 schools. While agreeing on the significant direct influence of classroom teachers on student achievement, Dinham (2008) found encouraging findings for school leaders, especially principals. From analysis of the data on principal leadership, a set of seven categories,

attributes, and practices of the principal were found to contribute to remarkable student achievement (Dinham, 2008, pp. 37–59):

i. External awareness and engagement
ii. A bias towards innovation and action
iii. Personal qualities and relationships
iv. Vision, expectations and a culture of success
v. Teacher learning, responsibility and trust
vi. Student support, common purpose and collaboration
vii. Focus on students' learning and teaching.

Further studies (Leithwood & Mascallm, 2008; Robinson, 2007; Robinson et al., 2008) found a link between classroom instruction and student achievement and essentially arrived at a similar conclusion—i.e. that while it was about strategic direction, structure, and targeted intervention, it was more about drilling down to explicit instruction in the classroom (CESE, 2014b). Other research (Reeves, 2008) argued that school leadership matters, that leadership is inclusive, and that leadership can be taught. The conclusions are inescapable: "leadership actions matter not only with regard to absolute measurements of student achievement, but particularly for gains in student achievement" (Reeves, 2008, p. 4).

The Australian Institute for Teaching and School Leadership National Standards for Principals (AITSL, 2011, 2014) has identified particular principal capabilities to lead self and others. The principal capability requirements recognise the importance of emotional intelligence, empathy, resilience, and personal well-being in the leadership and management of the school and its community. The leadership capability standards also identify that principals should regularly review their practice and implement change in their leadership and management approaches to suit the context of the school. Principals also need to be self-aware and use ethical practices and social skills to deal with conflict effectively. The school leadership national standards also indicated that principals, by leading others, should be able to build trust across the school community and to create a positive learning atmosphere for students and staff, and also within the school community. AITSL (2011) reinforced that principals continuously need to improve their networking and influencing skills.

Therefore, if anyone can influence classroom teachers, who in turn influence student achievement, it is the principal. Both directly and indirectly through the classroom teacher he or she recruits, selects and appoints, the principal should also coach and mentor

classroom teachers. Principals do make a difference in school improvement and to student achievement, with research on the impact on student learning confirming that the principal is second in influence only to the classroom teacher (Leithwood & Jantzi, 2005; Leithwood, Seashore Louis, Anderson, & Wahlstorm, 2004). Fullan (2018) in his latest book, *The Principal,* explains the three key roles that Principals must play in order to have the major impact on student achievement. The first key being the learning leader, the second key the district and system player and the third key the change agent.

This is why learning from the best school systems in East Asia (Jensen et al., 2012) and Europe, writers (Barber & Mourshed, 2007; Barber & Mourshed, 2009; Mourshed et al., 2010; Schleicher, 2018) have argued that we must secure school leaders who have the capabilities known to make a difference as instructional leaders and engage principals in leadership education programs. The principal as the school leader who can articulate vision and mission is also important in gaining successful improvements in student achievement. In particular, building principal capacity is a primary means of commitment to the moral purpose. Therefore, a key role of a high-performing school system is to develop capable school leaders (Schleicher, 2018).

2.4.3 Building teacher capacity

The literature was unequivocal that any improvement in student achievement had to start in the classroom with the teacher (Arnett et al., 2018; Dinham, 2016; Fullan, Hill, & Crevola, 2006; Hattie, 2003, 2012; Martin & Dowson, 2009). Therefore, quality of teaching was deemed far and away the largest influence on student achievement and the twenty-first century teacher had a "high and growing expectation" role description (Schleicher, 2018, p. 256). More simply, Hattie (2015) pointed out that the classroom students attend is far more important than the school they attend.

Capacity within the context of school improvement is the ability to enable all students to meet high expectations. Capacity can be built by improving teacher practice through the provision of additional resources, technology, and professional development (Timperley, 2008). Most strategies in school systems target individual teachers (Barber & Mourshed, 2007; Barber & Mourshed, 2009; Jensen, 2012; Mourshed et al., 2010). As Sergiovanni (2000) indicated:

> Teachers count in helping schools to be effective. Building capacity among teachers and focusing that capacity on students and their learning is the crucial factor.

> Continuous capacity building and continuous focusing is best done within communities of practice. (p. 140)

Research by Hattie (2009) has provided compelling evidence for the importance of teaching practice. This research has recognised that teachers are a major source of explained difference in student achievement. Hattie (2009) argued that it is what teachers know, do, and care about that are the most significant influence in teaching and learning practice. This concurs with the view that "the source of any school improvement hinges on teachers" (Arnett et al., 2018, p. 5).

A school system's ability to build teacher capacity is central to improvement, and starts with employing teachers who have potential. Successful school systems in Singapore, China, Hong Kong, Finland, and Korea focus on attracting talented teachers, confirming the difference the right talent can make in a school. A McKinsey report (Barber & Mourshed, 2007, p. 8) found that in the world's ten best-performing school systems "the quality of an education system cannot exceed the quality of its teachers" (p. 8). The report found that successful school systems:

i. attracted more talented people to become teachers;
ii. developed their teacher practice, and, for those becoming school principals, developed them into committed and talented leaders; and
iii. ensured that teachers consistently delivered the best possible instruction for every child in the system, including early and targeted intervention for classroom, school, or system underperformance (Barber & Mourshed, 2007).

Therefore, school systems that attract people with ability and knowledge into the teaching profession can improve student achievement. The top-performing school systems internationally have achieved this by making entry into teacher education highly selective, developing effective practices for recruiting and selecting the right applicants, and remunerating teachers appropriately at the start of their teaching career (Barber & Mourshed, 2007). School systems that aim to accomplish these fundamentals drive the prestige of the teaching profession, which, in turn, attracts better applicants to become classroom teachers and potentially school leaders.

Leading school systems internationally have focused on the quality of the teacher and their quality of teaching practice (Barber & Mourshed, 2007; Jensen, 2012; Mourshed et al., 2010; Schleicher, 2018). Successful school systems ensure that this greatest influence (i.e. the

teacher) is optimised to impact on student achievement (CESE, 2014b; Hattie, 2009). The four high-performing school systems in East Asia (Korea, Singapore, Hong Kong, and Shanghai) (Jensen, 2012) have introduced one or several of the following teacher educational changes to building capacity:

- Providing extraordinary quality teacher education;
- Providing mentoring focused on improving learning and teaching;
- Viewing teachers as researchers of their classroom practice;
- Using classroom observation for feedback on classroom practice, and
- Promoting effective teachers and giving them more responsibility for learning and teaching.

In regard to building teacher capacity, the literature reflects its growing importance on classroom teacher leadership (Crowther, 2009; Murphy, 2007). This is not merely sharing or distributing leadership by delegating responsibilities to classroom teachers. It is an inclusive concept of professionalism that embraces leadership as well as the responsibility of the work of a classroom teacher (Durrant, 2004; Frost, 2004). Teacher leadership is founded on authoritative theory, which is unique, diverse, and can be nurtured (Harris & Muijs, 2004; Muijs & Harris, 2003). As teacher leadership becomes more common, the implications for school improvement and for the role of classroom teachers becomes far more important.

Crowther (2009) posited that to successfully develop school improvement, it cannot be separate from teacher leadership. Teacher leadership flourishes when a significant school need provides a focus for a classroom teacher's developmental work and when the school leadership team (usually the principal) presents project opportunities and facilitates leadership skill development (Crowther, Ferguson, & Hann, 2008).

The research on school improvement has consistently underlined the significance of distributed leadership in the shape of teacher leadership (Harris, 2009a). Here, the greater involvement of the classroom teachers in decision-making has highlighted the influence of teacher leadership on school improvement and educational change (Crowther et al., 2008; Harris & Muijs, 2004; Murphy, 2007). This has reinforced the importance of teacher leadership in securing school improvement and underscored how teacher leadership is a shared or distributed professional responsibility. Research conducted in England has also reinforced that teacher leadership encourages students' motivation to learn and their subsequent achievement (Harris & Muijs, 2004). This research also suggested that teacher

leadership has a positive impact on teachers' self-efficacy, which can affect student achievement.

The literature on distributed leadership is prominent and relates to the establishment of professional learning communities (Harris, 2009a, 2009b). This highlights that building collective capacity makes a difference to student achievement and that leadership within effective professional learning communities is widely shared or distributed, not only within the school, but also across the school system (Hallinger & Heck, 2009; K. S. Louis & Marks, 1998). Therefore, the literature suggests that leadership responsibility extends beyond the principal's role in the school into system leadership, which is also an important force for developing systemic school improvement (Hopkins & Higham, 2007).

Unfortunately, there is little known research to demonstrate that school leaders engage in systems thinking and action that can address complex systemic issues and deliver systemic school improvement. Nevertheless, the literature has explored how system leadership can influence student achievement through systemic school improvement and the underlying assumption that this is best delivered by building collective capacity (M. Wheatley, 1999). This would seem to suggest that further research is required to focus on the emerging role of system leadership as it connects with the traditional lateral structures. Such research would provide insight into how to build collaborative capacity across the vertical structure of a school system.

2.4.4 Building Collective Capacity

There is research investigating the idea of leadership building collective capacity among a wider group of people. Leadership concepts include distributed leadership (Harris, 2009a, 2009b), teacher leadership (Harris, 2003; Harris & Muijs, 2004), shared leadership, collective leadership, and parallel leadership (Durrant, 2004; Frost, 2004). The main idea shared by these thoughts on leadership is not solely about building individual capacity, but about spreading it throughout a school system with leadership roles and responsibilities being performed by various classroom teachers and support staff that do not necessarily hold formal leadership positions in schools or the school system. The emerging sub-themes to build collective capacity rely on collaborative practices and a particular type of leadership system. Collaborative practices and system leadership are discussed in the next sections.

2.4.5 Collaborative practices

One of the attributes of leadership is about enabling and providing opportunities for others to learn in the school and across the school system. Leadership is really about collectively learning, which moves towards addressing a shared vision, mission, and moral purpose with particular values. As Lambert (2003) pointed out "learning and leading are deeply intertwined ... Indeed, leadership can be understood as reciprocal, purposeful learning in a community" (p. 2). By showing a close connection between defining leadership and learning, Lambert (1998) emphasised that:

> The key notion in this definition is that leadership is about learning together, and constructing meaning and knowledge collectively and collaboratively. It involves opportunities to surface and mediate perceptions, values, beliefs, information, and assumptions through continuing conversations; to inquire about and generate ideas together; to seek to reflect upon and make sense of work in the light of shared beliefs and new information; and to create actions that grow out of these new understandings. Such is the core of leadership. (pp. 5–6)

This is consistent with John Hattie's (2015, p. v) notion of 'collaborative expertise' across the school system: "It involves collaboration horizontally (from classroom teacher to classroom teacher, from school to school) and vertically (from classroom teacher to school leaders to policy-makers)" (Hattie, 2015, p. v).

A strong message in the literature (Duignan, 2007; Senge, 2009) is that the schools that are improving are the ones that have learned to succeed with educational change and are moving towards the notion of a learning organisation, where school systems are always seeking new ways of improving their teaching practice. One way of moving towards a learning organisation is to invest in building collective capacity through leading 'collaborative professionalism' (A. Hargreaves & O'Connor, 2018) and 'team learning' (Senge, 2009). The recent Gonski report (Gonski et al., 2018) endorsed professional collaboration recommending the use of collaborative practices (mentoring, observation and feedback) in the core role of classroom teachers and creating the conditions to enable their development of contemporary pedagogy.

Senge (2009) believed team learning was vital because teams, not individuals, are the fundamental learning entities in organisations, generally. He stated that "unless teams can learn, the organisation cannot learn" (Senge, 2009, p. 36).

The features of a highly functional learning team have been identified as having:

i. Shared mission, vision and values;
ii. Collective inquiry;
iii. Common approach;
iv. Collaborative teams that are honest and open;
v. Action orientation and experimentation;
vi. Continuous improvement, and
vii. Results orientation. (DuFour & Eaker, 1998, pp. 25-29; Senge, 2009, p. 37)

In school improvement literature, the term 'professional learning community' (PLC) concerns the establishment of a school culture that provides classroom teachers with opportunities to learn together. Stoll and Louis (2007, p. 2) asserted "there is no universal definition of a professional learning community", but there is a consensus that PLCs are evident when classroom teachers meet together, share, and critically reflect on their classroom practice in a learning-oriented manner that promotes professional growth.

Improvements in teaching will occur mostly in a professional learning community when opportunities are provided for classroom teachers to work together and to learn from each other (A. Hargreaves, 2003; MacBeath & Dempster, 2009). A PLC promotes conversation and discussion of ideas, beliefs, and experiences. Classroom teacher collaboration and enquiry practices afford feedback and assessment that remind classroom teachers to reflect on their own teaching practice (Fullan, 2008). Those classroom teachers who recognise that enquiry and reflection are important collaborative practices find it easier to sustain improvement in teaching and learning. School systems in Japan and Finland allow classroom teachers to learn from each other by jointly planning lessons and observing each other's lessons. These school systems give rise to a school culture where there is a shared moral purpose, collaborative planning, reflection on classroom instruction, and peer coaching, which become a way of school life. This enables classroom teachers to embrace continuous professional learning and growth in their teaching practice (Barber & Mourshed, 2007).

In reality, the literature acknowledges that PLCs are hard to create because there is growing recognition in the field of school improvement that 'one size does not fit all' and different types of schools and systems need different ways to embrace school improvement (A. Hargreaves, 2003, p. 189). There are a number of preconditions that seem to allow the development of PLCs. In the area of human and social capital (Caldwell & Harris, 2008; Stoll & Louis, 2007), there is a need to improve relationships that reflect trust and respect, have

access to practitioners' knowledge (expertise), supportive leadership, and opportunities for socialisation. There are difficulties with PLCs concerning times and venues to meet and discuss, as well as interdependent classroom teacher roles, open communication structures, classroom teacher empowerment, and social autonomy.

In some school improvement projects, such as the 'Accelerated Schools and Improving the Quality of Education for All' project (Harris, 2002), schools are encouraged to build their own PLCs both within and beyond their own school. In Finland, it is common school practice for classroom teachers to engage in other school visits within their school system to support their professional learning, develop relationships, and learn new teaching practices (Caldwell & Harris, 2008). Emphasis is placed upon teacher collaboration and networking. The end result is not only the sharing of good teaching practice but also the establishment of professional learning communities within and beyond the school that can sustain and maintain improvement.

The growing knowledge about PLCs continues to enhance researchers' appetites concerning the potential for engaging classroom teachers in helping to build their capacity and capabilities. Gradually, researchers are providing evidence that collaborative learning communities make a difference to student achievement. Stoll and Louis (2007) suggested that we may have found the conceptual hook that provides a new method of thinking about re-culturing and transforming schools to improve student achievement. PLC models are one way of building collective capacity and are being used across school systems to build capacity for educational change (Harris, 2010).

In England, there is the emergence of schools working together collaboratively in a variety of ways, leading to building system capacity (D. Hargreaves, 2011). Building system capacity refers to the school system's capacity to influence student achievement through practices that influence what occurs in the classroom and in the school. Some of the features of this approach are in line with the findings of international case studies:

> We encountered collaborative practice wherever there are high-performing schools … Collaborative practices embed routines of instructional and leadership excellence in the teaching community, making classroom practice public, and develop teachers into coaches of their peers. These practices are, in turn, supported by an infrastructure of professional career pathways that not only enable teachers to chart their individual development course but also help to share their pedagogic skills throughout the system. Collaborative practices shift the drive for improvement away from the centre to the front lines of schools, helping to make it

self-sustaining. (Mourshed et al., 2010, p. 77)

A living-systems lens also offers a perspective that complements the best school system's educational practice globally. The living-systems literature proposes that collective intelligence and informal relationships in human systems should be enabled rather than suppressed (Jansen et al., 2011). Wheatley (1999) described living systems as webs of relations where individuals recognise the benefits if they can produce a system of interdependency. Living systems form through collaboration, realising that life is maintained in relationships. Living systems contain their own solutions and are healthier when they connect to more of themselves because in the system there are people who already have a solution to a problem (Wheatley, 1999).

The central idea of working with a living-systems perspective is to build collective capacity within the school system through educators utilising collaborative practices with the aim of co-constructing new knowledge and practising cooperation (Harris, 2010). Harris (2010) argued that collaborative practices must afford opportunities for educators to innovate and learn collectively within and across the school system. For this to succeed, the glue that binds systemic school improvement is constant communication across all levels of the school system, a focus on capacity building, strategies for problem-solving, and the careful recruitment and selection of leaders and their professional development to serve the moral purpose of education (Fullan, 2010). Professional learning communities in the school and across the school system offer just one driver for systemic school improvement. Systemic school improvement seems to rely upon the capability at different levels of the school system to respond to the educational changes required to ensure systematic, self-sustaining and unstoppable systemic school improvement (Fullan, 2009). A systemic school improvement approach requires leadership with the capability to create alignment between all levels of the school system. The notion of system leadership has emerged as the required particular leadership style to achieve systemic school improvement (Fullan, 2018; Harris, 2010).

2.4.6 Building system leadership capacity

It has already been identified in the literature (Fullan, 2018; Higham, Hopkins, & Matthews, 2009) that systems thinking is an emerging practice in school systems along with the emerging potential of system leadership. Hopkins (2010, p. 212) defined system leaders as "those head teachers [principals] who are willing to shoulder system leadership roles: who

care about and work for the success of other schools as well as their own" and contribute to system-wide cultural transformation. The principal needs to become a "system player" (Fullan, 2018, p. 93).

The world's best-performing school systems improve student achievement by building system leadership capacity (Barber, Whelan, & Clark, 2010). This involves not only developing future leaders into instructional leaders, but focuses on the recruitment, selection, and appointment of school leaders and the professional learning opportunities available for these school leaders, which also apply to middle-tier leaders within school systems (Barber et al., 2010; Huber & Muijs, 2010).

Hopkins and Higham (2007) argued:

> The greatest challenge on our leadership journey is how we can bring about system improvement. How can we contribute to the raising of standards, not only in our own school, but in others and colleges too? What types of leaders are needed for this task? (Hopkins & Higham, 2007, p. 147)

The answer to the above questions was explained in Fullan's argument that:

> … a new kind of leadership is necessary to break through the status quo. Systematic forces, sometimes called inertia, have the upper hand in preventing system shifts. Therefore, it will take powerful, proactive forces to change the existing system (to change context). This can be done directly and indirectly through systems thinking in action. These new theoreticians are leaders who work intensely in their own schools, or national agencies, and at the same time connect with and participate in the bigger picture. To change organisations and systems will require leaders to get experience in linking other parts of the system. The leaders in turn must help develop other leaders with similar characteristics. (Fullan, 2004, p. 7)

The system leadership role, seen through a living-systems lens, is about being an enabler who encourages and influences collective behaviour. Therefore, a system leadership role determines the factors that guide the collective behaviour in the school system (Jansen et al., 2011). Wheatley (2011) also argued that having an understanding of how interactions work is an important element in the change process, as well as understanding the system factors themselves. UhlBien and Marion (2008) summarised the two roles for such system leadership as first to enable the conditions in which complex ideas can emerge and, second, to promote coordination between adaptive and organisational structures.

System leadership leads the moral purpose with passion and encourages others to follow. Hopkins (2008) claimed, therefore, that system leadership can express moral purpose through:

i. Leading and measuring success through improving student achievement and striving to both raise the bar and narrow the gap;
ii. Committing to the improvement of teaching and learning by engaging in teaching practice, curriculum, and assessment so as to ensure learning is increasingly personalised for students;
iii. Developing professional learning communities within their schools and building relationships across the school system to provide a range of learning experiences and professional learning opportunities;
iv. Striving for equity and inclusion through acting on context and culture, not only in response to poverty but also to employ educational resources to help give communities a greater sense of aspiration and empowerment, and
v. Managing strategically the impact of the classroom, school, and system on one another, understanding that, in order to change the school system, all impact on each other. Crucially, they understand that in order to improve the school system they have to engage with it in a meaningful way.

Hopkins and Higham (2007) described system leadership roles emerging within various school systems that were consistent with moral purpose. System leadership should have strategic capabilities and be able to set direction by translating a moral purpose that is focused on the teaching and learning practice. It also involves developing school leaders and classroom teachers by reshaping the interaction and relationships across the lateral structures of the school system. In addition, system leadership focuses on improving other schools in the system, sharing curriculum innovations, empowering school communities, and/or leading community partnerships dedicated to enabling all schools to move forward—thus, new ways of thinking and working collaboratively begin to emerge in the school system.

Given that systemic school improvement needs to move forward in rapidly changing educational times, and considering the complexity such changes cause, school systems can be seen as being characterised by uncertainty and unpredictability. The complex and changing conditions in which school systems operate have fostered the emergence of

adaptive, innovative, and responsive practices that could allow school systems to move to an adaptable and sustainable position in the future.

Therefore, the following questions informed this study:

- How does the school system build capacity across the school system?
- How do we embed professional accountability into building capacity?
- How do we connect school leaders to system leadership?
- How does systemic school improvement build capacity?

2.5 Theme 3: Adaptability for Sustainability

In the literature pertaining to school systems the idea has emerged that these systems should be viewed as complex living systems with the ability to adapt in response to uncertainty, complexity, and ambiguity (Goss, 2017; M. Wheatley, 1999, 2006). A living-systems perspective provides some guidance as to practices that enhance self-organisation and emergence. Self- organising behaviour is common in the natural world and is characterised by collective behaviour that is self-organised in a manner that responds to changing conditions (Jansen et al., 2011). School system practices have the potential to enable self-organising behaviour to discover shared interests, to clarify its intent, and strengthen connections. The attention to practice has enabled school systems to adapt to educational change and develop flexible and resilient plans to monitor sustainability. A living-systems lens offers a perspective that is complementary to best practices globally on educational change. Improved school systems are required to use data effectively to adapt to complex changes and, over time, became sustainable in influencing student achievement. Therefore, the sub-themes ‘Use Data Effectively’ and ‘Plan and Monitor’ are at the centre of this theme and the importance lies in the way they connect and inform systemic school improvement to adapt and sustain to uncertainty, complexity, and ambiguity.

2.5.1 Use data effectively

Interest in using data effectively to monitor student achievement has increased in school systems (Sharratt & Fullan, 2012). In particular, informative data bring together research underpinning the 'assessment for learning' used in high-performing school systems to inform effective teaching practice and how students learn. The use of data has become less of an art, and more of a science, as discussed in Chapter 1 (Section 1.2.1 International context) and the aim of PISA (Schleicher, 2018).

Unfortunately, many schools have come to see this data gathering and publication as more of a mandated external accountability process to weigh and judge their school rather than as professional internal accountability to inform student teaching (Forster, 2009). Data, which can be gathered from a range of sources, both assist understanding and guide and build a learning culture by helping schools:

i. compare themselves—look at what progress they are making compared to previous years;
ii. compare their statistical neighbours (contextually, like schools); and
iii. examine their results relative to an external or absolute standard, such as how other schools in the state or nation are faring against key indicators such as literacy and numeracy (Fullan, 2008, p. 97)—for example, in Australia the NAPLAN test data and My Schools website.

The effective use of data appears to require transparency; being open about results is essentially an exercise, with a lot of challenges built into school-system practice, but that challenge is based on constructive transparency and a no-blame culture. When effective data are used, presented in a non-judgmental manner, reflected on and discussed by teachers collaboratively, and used for the purpose of improving student achievement as well as for external accountability, serves to balance, challenge, and support schools (Fullan, 2008). When data are used effectively, the positive power of transparency is enormous. In the public sector in England, transparency is vital to all serious school improvement practices (Barber & Mourshed, 2007). It should not be seen by school leaders and classroom teachers purely as a mandated external accountability practice but more as an instrument that can be used to support informative assessment for learning improvement and student achievement (Forster, 2009).

If the systemic vision, mission, and moral purpose are about improving student learning, they should reinforce the use and focus of student achievement data. They need to relate to the use of data to improve learning and to support teachers. Forster (2009) confirmed that students learn best when they understand what to learn and what is expected of them, and receive regular feedback about what they can do to improve their student achievement. A meta-analysis by Robinson, Lloyd, and Rowe (2008) identified that school leaders have an influence on improving student achievement through the promotion of, and participation in, teacher professional learning communities. Creating this kind of culture in schools, in which teachers collaboratively use effective data to inform their teaching practice for the benefit of students, requires that they teach in contexts in which such practice becomes part of the school's improvement culture. This is endorsed by Sharratt and Fullan's (2012) research on putting faces on the data by developing a common language for sharing all students' achievement with all classroom teachers and school leaders and how to use ongoing assessment as evidence to inform explicit classroom practice.

In school transformation and in any educational change, data plays an important role in systemic school improvement. Data offers a foundation for the examination of school performance but also allows school systems to monitor the impact and effect of interventions aimed at influencing student achievement (Mourshed et al., 2010). Goodall, Harris, and Allen (2008, p. 17) suggested that "we are far more data rich and data smart in using the data that has an impact in teaching and learning within the classroom".

The Canadian systemic approach to data usage appears to have drawn a palpable link between accountability and support (Campbell & Levin, 2009; Sharratt & Fullan, 2012). The same Canadian school system has also developed very useful professional learning opportunities for classroom teachers through programs such as 'Leading Student Achievement' by the Ontario Principals Council. Further, in both Scotland and England, the inspection regime is backed up by highly developed external testing that has the capacity to track the performance of both individual student achievements and entire classes. This has challenged classroom teachers to focus on each student and has required the teachers to have the ability and capacity to track the performance of student achievements. In most countries, including Australia, strategies seem to have been developed to consistently describe the achievements of students, classroom teachers, schools, and the school system with a built-in culture committed to improvement through the use of data (Campbell &

Levin, 2009). The platform of any approach has been data-informed improvement using student achievement, which in turn informs an understanding of the classroom teacher's practice and, therefore, the school's performance. The Gonski report (Gonski et al., 2018) recommended the need of reliable data on 'bottom up' innovations as critical to support school leaders and classroom teachers in improving student achievement.

If principals, as instructional leaders, are to engage in making use of valid and reliable data on student achievement, the school systems in Canada, Scotland, and England are good models. These systems have found ways to do so by ensuring that principals are provided with a set of practices and that the various systemic practices are not only consistent with one another but aligned to inform and improve one another. The requirement for systemic school improvement seems to work with schools to help them develop strategies connected to the curriculum. This makes it possible to track learning growth, identify student needs over time, and implement targeted intervention into the school, and also to use external student performance data in literacy and numeracy to support that improvement. If effective use of data management is important as an instrument for all classroom teachers and school leadership teams, it must also be important for the school system in responding to changes in student achievement and in informing the planning for school improvement and providing evidence-based practice. School leaders and classroom teachers no longer need to make judgements and decisions relying on an instinct about how best to support their students. We now have a growing body of educational knowledge making it possible to identify policies and practices that have been shown to be effective. To sustain continuous improvement, Australian schools need access to valid and reliable evidence of effective teaching practice (Gonski et al., 2018).

2.5.2 Plan for improvement

Systemic school improvement success seems to involve some form of educational change and requires schools to implement a change process. In order to ensure that change is implemented successfully, school systems must have the necessary planning practices. Effective systemic school improvement approaches would help schools build the capacity of school leadership teams and classroom teachers for implementing educational change and improvement (Harris, 2002).

Traditionally, schools seem to have been resistant to educational change, perhaps because they needed well-defined practices for systemic school improvement which were not

available. Here, the school improvement literature advocates a much greater focus on the school as a place of educational change and takes a far more holistic view of the practices. However, apart from general affirmative statements, the literature gives little help in determining how the practice of school improvement occurs. One major reason for the lack of effective educational change lies in an absence of thorough planning for educational change (Dinham, 2008; Harris, 2002).

The literature suggests that educational change tends to be marked in two distinctive ways within a school, the first being 'incremental change' (Hopkins, 2001) and the second being 'planned change'. Planned change adapts and disturbs the natural course of events (Fullan, 1991). In school improvement, the dominant form of educational change is planned in the sense that deliberate attempts are made to change practice in an improvement culture. Harris argued "successful school improvement involves careful planning for the proposed change and the anticipation of problems or barriers before the change is introduced" (Harris, 2002, p. 36).

In the school improvement literature, planning has been shown to be an important factor (Downey et al., 2008; Mooney & Muasbach, 2008). Effective planning not only helps the school organise what is already happening and what needs to be done in a coherent way, but it also helps school leadership teams and classroom teachers accomplish innovation and change successfully by mapping pathways from 'good' to 'great' (Sharratt & Harild, 2015). There have been studies that have focused on the impact of planning on schools. Research has suggested that although many schools have plans, these plans do not always lead to school improvement (Harris, 2002). Further, the research has suggested that the organisational and cultural arrangements of the school predispose it to certain types of planning, and that there is a likely relationship between the plan and the organisational and cultural conditions of the school. Therefore, effective planning offers a map for improvement that would require the following: operational changes if improvements were to occur; priorities that clearly state the desired outcomes and targets to be achieved; the strategies to be implemented; and the methods for measuring and assessing student achievement.

The literature review has shown that school improvement planning can lead to improved student achievement. An improvement planning process gives the principal and a comprehensive school a framework for effective instructional leadership and school

management, which can engage the school community. In Ontario, Canada, 'Working Together for Student Success' (Jackson, 2005) provided an influential process for planning for improvement. The planning model featured a clear design that outlined the purpose and process. It was a process with no fixed beginning or end, but rather a cycle of continuous planning, implementation, and evaluation that provided a framework for adaptable and sustainable school improvement.

Within English schools, strategic planning, in the form of school improvement planning, has been a leading approach to school improvement, drawing on the research findings from the National College for School Leadership (NCSL) research project 'Success and sustainability: Developing the strategically focused school' (Davies, 2011). The project developed a model of strategic planning practices that were key elements in successful schools. The project defined a strategically focused school as one that is educationally effective in the short term but with a clear framework and practices to address the vision, mission, and moral purpose that could be sustainable in the medium to long term. The project identified the strategically focused school as having school leadership that enabled short-term goals while at the same time building capacity for long-term school improvement.

In Scotland, the school system has made substantial progress in systematic planning for school improvement. Its school improvement framework 'How good is our school?' (Her Majesty Inspectorate of Education, 2007) has provided indicators that can be used within the planning process to evaluate the quality of school provision and to help identify areas for improvement. The Scottish school system planning for improvement describes in detail the key practices that underpin the indicators, stressing the importance of any action taken within the planning process having an impact on the life of the school and on the experience of every student. Planning involves the clear articulation of the strategic vision of the school, practical and manageable action planning, and a focus on measurable outcomes and demonstrable improvements.

Systemic school improvement frameworks have been developed for ensuring quality of learning outcomes and are governed by an approach for schools and their communities to plan, monitor, and review their performance. The concept of a systemic school improvement framework approach is focused on recognising the need to adapt to educational change, build on success and confront, with targeted initiatives, those outcomes recognised as being below expectation. This allows school systems to address these imperatives and improve

their performance in relation to the targets they have established. Such frameworks build firm foundations to facilitate the continued systemic school improvement of student achievement. Frameworks are also key accountability drivers in being able to demonstrate and report school success and to increase high standards of quality assurance in the school planning processes. Planning enables a focus on measures that improve a school's capacity to deliver the best opportunities and outcomes for students. All Australian government sector school systems have some form of a school planning accountability framework, with most Australian Catholic sector school systems having similar frameworks to support school improvement planning.

Effective planning is based on collaborative practices of professional reflection and discussion. Such discussion encourages staff learning, ownership, teamwork, and leadership. Focusing on school improvement enables school leadership teams and classroom teachers to see the 'big picture' and reflect on, and so learn more deeply about, their own roles and responsibilities in achieving positive influences on student achievement. An important aspect of effective planning is monitoring school improvement, an essential aspect of influencing student achievement.

2.5.3 Monitor for continuous improvement

Successful school systems monitor school improvement and student achievement. They are both essential aspects of the evaluating practice and determine whether alternative improvement strategies should be explored. In successful schools, monitoring student achievement is used and informs effective planning (Leithwood, Aitken, & Jantzi, 2006). The world's best school-system researchers (Barber & Mourshed, 2007) recognised that schools could not improve what they could not measure. Monitoring student achievement allowed school systems to identify and share best practice, identify areas of weakness, and hold schools accountable for their performance. A combination of monitoring and intervention is essential in ensuring that quality teaching and learning is delivered across any school system. The internationally high-performing school systems monitor their performance through testing and self-review. They use the data for monitoring and self-review in order to inform targeted interventions that are designed to improve student achievement. The internationally best-performing school systems implement self-review practices in schools, constantly evaluate student achievement, and construct targeted interventions to assist

students in order to prevent them from failing to achieve their potential (Barber & Mourshed, 2007).

The monitoring of school improvement—encountered by addressing educational changes, and initiating and implementing measures to improve school achievement—varies from country to country. One significant and a common attribute is the insistence on educational accountability through such strategies as external reviews and measurements of school and student achievement. These in turn are linked to levels of government funding, or are published in school-by-school league tables of results.

In many countries, for many years, school evaluation has been closely linked to external review and school improvement. In England, school system national inspection systems have been the main agencies of external review. National inspection agencies such as the Office of Standards in Education (OFSTED) in England and the Office of Educational Review (OER) in New Zealand have used wide-ranging student assessment programs linked with a national system of school external review. Many of these external approaches have a closer association with the requirements of mandated external accountability than with developing successful, sustainable school improvement strategies through professional internal accountability.

Although school inspection regimes may facilitate highly mandated external accountability, as in England, there is relatively little evidence that they are the most effective drivers of ongoing school improvement. Alongside extensive international approaches to external school reviews, many countries have also developed more recent approaches to internal accountability through 'school review' or 'self-evaluation' (Bamford, 2007; Nevo, 2002). For example, Participatory Evaluation (Cousins & Whitmore, 1998), Empowerment Evaluation (Fetterman, Kaftarian, & Wandersman, 1996), Total Quality Management (TQM) (Evans, 2002), and the approach to Action Research (McNiff, 2006) all seem to apply self-review approaches at the school level. Developing self-review in schools has been linked to the desire to empower principals, school leadership teams, and classroom teachers, encouraging them to take greater ownership of improvement practices in their own schools.

Increasingly, and in a range of international contexts, systemic school review or evaluation has become more closely linked with approaches to external review. Globally, school review can provide a strong basis for a 'softer' external practice. Similarly, the outcomes of an external review can also stimulate further internal development. Internal and external

reviews have increasingly come to be seen as complementary, rather than opposites. Since the publication in 1996 of a framework set of school quality indicators known as 'How good is our school?' in Scotland, for example, have used a practice of self-evaluation against agreed criteria. The framework has been further updated since 2002 and has been renamed 'How good is our school: The journey to excellence' (Her Majesty Inspectorate of Education, 2007), launched in 2007. Different approaches to systemic school review have developed in other countries. Criteria for school inspectorates in Ireland (2002) and England (2005) seem to promote school internal reviews — 'self-evaluation' — as an ongoing school improvement practice.

> Data and self-evaluation are at the heart of sustaining transformation; the use of data provides a powerful basis for ongoing review and change. Sustaining transformation is unlikely without some external impetus, drive and input and is highly dependent on knowledge transfer between schools. (Goodall et al., 2008, p. 7)

In 2003, the New Zealand EOR also published the criteria and evaluation indicators for its 'Framework of Reviews'. Similarly, OFSTED, the inspection agency in England, produced self-evaluation guidance for schools in both 2005 and 2006. These systemic frameworks and approaches, from a range of international contexts, share the common features of establishing clear criteria for school review and improvement at a system-wide level, and then develop clear practices for schools to undertake rigorous internal reviews against agreed criteria. Many of these approaches also build in an element of external review to complement the internal practices. David Nevo's 'School-Based Evaluation: An International Perspective' (Nevo, 2002) also identified case studies of school systems or aspects of internal school review operating in Norway, the Netherlands, Austria, Spain, Canada, USA, Israel, England, Scotland, and Germany. In Hong Kong, a wide-ranging school self-evaluation project was taken forward in 2003 through the 'School Development through School Self-Evaluation Project' (MacBeath, 2006). Nevertheless, Goodall et al. (2008) argued that sustaining systemic school improvement meant that schools engaging in self-renewal were driven internally rather than externally by a 'top down' approach. Schools that sustained improvement had practices of internal accountability and set high expectations for themselves. These schools had sophisticated feedback mechanisms that ensured that innovation was properly evaluated. Their prime concern was to be internally accountable with a focus on teaching and learning as the only priority.

Internal school review can, therefore, help to develop a strong sense of classroom teacher ownership based on local context, but usually needs some form of systemic framework criteria for monitoring overall improvement. External review could help provide a wider perspective and help interpret data. It would seem that both internal and external reviews are needed, and the most successful systemic school improvement is often based on developing a conversation between the two (Nevo, 2001).

A key component at the centre of systemic school improvement is student achievement. Across many countries, the sequence of monitoring is cyclical and central to improving student achievement, which is focused on five key questions, as shown in Figure 2.2 (Gamble, 2007).

Figure 2.2 Cycle of school review and improvement—students at the centre

This cycle demonstrates that a culture of collaborative practice and dialogue among classroom teachers for influencing student achievement focuses on asking these five questions and then targeting energies to turn answers into practice and developing a no-excuse or no-blame culture in the school. The cycle of systemic school improvement is student-centred and aims at monitoring improvements in student achievement. The cycle is one of continuous improvement based on a process of annual self-evaluation.

The literature indicates that data and self-evaluation are at the centre of sustaining school improvement and the use of data provides a platform for ongoing review and educational

change (Harris et al., 2008). Quality-assurance approaches to systemic school improvement are now a central element of school systems in many parts of the world (Cuttance, 2005), as discussed in Chapter 1 (Section 1.2.1).

The research on the international best-performing school systems (Barber & Mourshed, 2007) has identified school review and improvement strategies for monitoring the quality of teaching and learning in schools. In addition, similar research has described the key principles of intervention, contextualising, sustaining, and ignition in how the world's most improved school systems keep getting better (Barber et al., 2010). Both these studies concluded that the very best international school systems intervened at the level of the student. They developed practices and structures within schools that could identify when a student was starting to fall behind and then intervened to improve that student's achievements. Intervention was important if the school system was to deliver consistently strong student achievement throughout all schools and was an element in any school review and improvement framework. How to sustain systemic school improvement is best summarised by Mourshed et al. (2010):

> For a system's improvement journey to be sustained over the long term, the improvements have to be integrated into the very fabric of the system pedagogy. We have identified three ways that improving systems do this: by establishing collaborative practices, by developing a mediating layer between the schools and the centre, and by designing tomorrow's leadership. Each of these aspects of sustaining improvement is an interconnected and integral part of the system. (p. 72)

Therefore, the following questions informed this study:

- How are data used as evidence in planning and monitoring practices to sustain student achievement?
- How does the school system ensure coherence in planning and monitoring practices across all schools?
- How does a school improvement approach ensure adaptability for sustainability?

2.6 The Research Conceptual Framework

In developing a conceptual framework for systemic school improvement for this study, the relevant literature was reviewed. The conceptual framework developed indicates that, in this study, an improving school is firmly reliant on the relationship between the educational context of the school system, the school, and the classroom.

The emergence of the paradigm for systemic school improvement in the conceptual framework represented a new way of thinking and appeared to work best with a tri-level approach. Yet Mitchell and Sackney (2011) have noted that, rather than a tri-level approach, educational change actually happens from the 'inside out' approach. Degenhardt and Duignan (2010) referred to such school change of this order as a "third wave" (p. 25). This approach to change in schools was based on school re-culturing and transformation, with the premise that the whole model and purpose of schooling needed to be reviewed, reconceptualised, and changed (Degenhardt & Duignan, 2010).

This study's conceptual framework has been developed by drawing on Hopkins's definition of school improvement as "planned educational change that enhances student learning outcomes as well as the school's capacity for managing change" (Hopkins, 2005, p. 3). The measure of a school system's success must, therefore, be achieved through improvements in student achievement. Parents' satisfaction informally judges schools based on this measure and governments judge school systems through an increasing number of publicly reported student achievement reports.

The conceptual framework is based on the primary contextual concepts of external pressure from governments to improve, providing resources to support improvement, and educational goals that exist in the national educational context. Even when school systems are free to determine their own improvement strategic intents, they will always have to be in line with the wider national goals; hence, they seem to be determined in that context. A good example of this is the National Declaration on Educational Goals for Young Australians (Ministerial Council on Education and Employment, 2008), better known as the Melbourne Declaration, which acknowledges that international changes are placing new demands on Australian education.

In the conceptual framework for this research (Figure 2.3), a graph with a vertical axis represents system school improvement and a horizontal axis represents time. A diagonal line depicts a school system moving continually onward and upward, improving over time and leading to better student achievement. Along this diagonal line lie the three themes: purpose and direction, building capacity, and adaptability for sustainability. These indicate that over time school systems, as they move forward and upward, start with setting purpose and direction, along the way building capacity and needing to adapt to the complexity of educational change in order to ensure sustainability. The three themes lie on the diagonal

line indicating all themes are connected to one another. At the centre of the graph are four concentric circles reflecting the tri-level relationship that exists between the student at the centre, the classroom, the school, and the school system. The diagonal line on the graph runs through the centre of the concentric circles depicting that students are at the centre of our work.

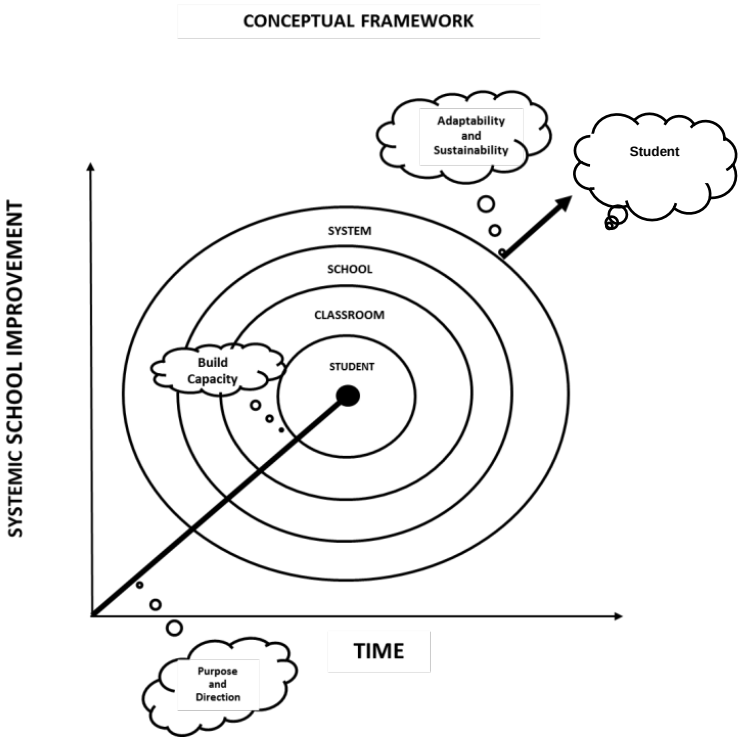

Figure 2.3 Conceptual framework for this research

The themes identified in Figure 2.3 and the interrelationships therein described constitute a framework for this study, enabling the development of the research question.

2.7 Development of the Research Question

The purpose of this study is to explore how a school system influences student achievement. A comprehensive review of the literature illustrated that what happens at the school system level can help schools and influence student achievement in the classroom. Systemic school improvements that can reach all students across the system require a wide vision and an approach as well as the implementation of a well-designed improvement plan. The literature review revealed several sub-themes, which have been clustered into three key themes called 'direction and purpose', 'building capacity' and 'adaptability for sustainability'. Although they are treated discretely in the synthesis of the literature, they are connected and mutually supportive and impact on one another so that school systems can study them in greater depth to ensure an influence on student achievement.

To help explain the key themes and their relationships to one another, a conceptual framework was developed based on a synthesis of the literature. Any systemic school improvement approach would require a sustained commitment to improvement over time to influence student achievement for all.

Understanding the nature of systemic school improvement and discovering the relationships between an approach to systemic school improvement and student achievement are integral to accepting the issues central to the research problem. Therefore, the research question for the study is:

How does a school system influence student achievement?

To address the research question, and to pursue the themes arising from the literature, the following four sub-questions were employed in the research process to guide the research methodology, data-collection methods, analysis, and interpretation of the results.

SQ1. How do principals, assistant principals, coordinators, and classroom teachers perceive the awareness, usefulness, and effectiveness of a systemic school improvement approach?

SQ2. How do principals, assistant principals, coordinators, and classroom teachers perceive a systemic school improvement approach providing direction and purpose, building capacity, and adapting for sustainable improvement?

SQ3. How have High Learning Gains (HLG) and Low Learning Gains (LLG) schools adopted a systemic school improvement approach?

SQ4. How do principals of schools in either HLG or LLG schools perceive a systemic school improvement approach influencing student achievement?

The first sub-question investigates the awareness, usefulness, and effectiveness of systemic school improvement and proposes some explanations for these. Similarly, the second sub-question looks at the themes identified from the literature review to ascertain if a systemic school improvement approach provides direction and purpose, builds capacity, and adapts to sustain improvement. The third sub-question responds to the second part of the research question to investigate the perceived influence of systemic school improvement on HLG and LLG schools. The final sub-question explores principals' perceptions from both HLG and LLG schools of the impact of systemic school improvement on student achievement.

2.8 Conclusion

This chapter reviewed the literature pertaining to the study's focus on systemic school improvement. As the stated purpose of this study was to explore the way in which the metropolitan Catholic School system influenced student achievement, it was necessary to review the literature relating to the major themes emerging that contribute to effective systemic school improvement.

The chapter had a number of clearly defined parts. The first section outlined the lessons learned from school effectiveness and school improvement. The next section discussed the influence of systemic school improvement on student achievement, with the further two sections outlining the conceptual framework for the study and the key themes emerging from the literature. Within these key themes, several sub-themes were identified and discussed. Finally, the literature identified the research question and sub-questions for the study.

The research design and methodology are the focus of Chapter 3.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

My study explored the extent to which a school system influences student achievement. The conceptual framework for the study was developed based on the literature reviewed in Chapter 2. The framework consists of three themes related to school improvement: direction and purpose; building capacity; and adaptability for sustainability.

To guide the methodology for exploring the research question — *How does a school system influence student achievement?* — four sub-questions were identified in Chapter 2. An overview of the research design and methodology is shown in Table 3.1.

Table 3.1 Overview of the research design and methodology

Theoretical Perspective	Pragmatism	• Involves using the method that appears best suited to the research problem; therefore, mixed-methods research was adopted.
Research Methodology	Case Study	• Concentrates on understanding and interpretation. • Intentional selection of research sites to learn or understand the central phenomenon.
Participants	Purposive selection	• Making a conscious decision about which participants in the research sites would best provide the desired information.
Mixed Methods	Questionnaire Document Analysis Semi-structured Interviews	• Quantitative and qualitative methods adopted, but predominantly qualitative used.

In the next section of this chapter, the theoretical framework is adumbrated to provide a justification of the research approach adopted.

3.1 Theoretical Framework

Some research writers (Mertens, 2005) refer to a theoretical framework as a 'paradigm'. The choice of paradigm reflects and informs the methodology of the research. This study was therefore conducted as a systematic inquiry where data were collected, analysed, and interpreted. The systematic nature of the inquiry led to a better understanding and description of the research problem under investigation.

According to Bogdan and Biklen (1998, p. 22), a paradigm is “a loose collection of logically related assumptions, concepts or propositions that orient thinking and research”. Weaver and Olson (2006, p. 460) stated that, “paradigms are patterns of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which investigation is accomplished”. Additionally, B. Taylor, Kermode, and Roberts (2006, p. 5) defined a paradigm as “a broad view or perspective of something”. Other researchers define a paradigm as a worldview consisting of the various philosophical expectations associated with that worldview (Creswell & Plano Clark, 2007; Teddlie & Tashakkori, 2009). These researchers state that a worldview consists of positions accepted on dimensions encompassing ontology, epistemology, axiology, and methodology. Therefore, four commonly agreed research worldviews which consistently appear were considered for this study, namely: **positivist** (Mertens, 2005, p. 12), **interpretivist/constructivist** (Cohen & Manion, 1994, p. 36), **transformative** (Mackenzie & Knipe, 2006, p. 3) and **pragmatic** (Mertens, 2005, p. 17).

The positivist, interpretivist/constructivist and transformative approaches represent different ways of trying to understand the same world. They differ in terms of what is emphasised, privileged, or reflected in different modes of inquiry. Compared to positivist approaches, interpretivist/constructivist approaches place much greater emphasis on understanding people’s experiences and making sense of their situations. However, this may be at the expense of validity and reliability—how can we determine if the data we collect have any relevance to the research question we claim we are investigating, and how accurate and robust are the data? How replicable and generalisable are the results? The transformative approach emphasises the power at work in any study, and highlights that we may get the results we want by looking only where we want to look. Therefore, from this perspective, it becomes clear that there is some merit in all of these perspectives, and it makes sense to be cognisant of them.

The pragmatic paradigm (Feilzer, 2010) provides a set of assumptions about knowledge and inquiry that supports the mixed-methods approach to this study. Such an approach is distinguished from quantitative positivist approaches and qualitative interpretivist/ constructivist approaches (Johnson & Onwuegbuzie, 2004)—wherein, depending on the research question and purpose of the research, either a quantitative or qualitative approach is employed. The pragmatic paradigm, which recognises the limitations of both approaches,

sees these different approaches as complementary. If the research problem is placed at the centre of a study that uses a pragmatic paradigm, this provides an opportunity for "multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis in the mixed-methods study" (Creswell, 2003a, p. 12). In other words, a pragmatic study provides the freedom to use any methods associated with quantitative and qualitative research.

Pragmatism was deemed suitable for this study because, first, a search for common ground—a compatibility of approaches (Tashakkori, Teddlie, & Teddlie, 1998). Second, it offered alternative methods when neither quantitative nor qualitative research alone could provide satisfactory findings (Tashakkori & Creswell, 2007). Third, it allowed for multiple methods from different paradigms to be used. In fact, this approach was desirable because research often needs both quantitative and qualitative approaches to obtain useful findings (Greene, 2007; Greene & Caracelli, 2003). Finally, there were occasions in this study when pragmatism allowed me to use common sense to create socially useful knowledge.

This study combined both quantitative and qualitative approaches into a mixed-methods design. Mixed-methods advantaged this study by using multiple techniques to explore the research problem. It provided the study with the ability to analyse data statistically, while also recognising the perceptions of participants of the systematic school improvement approach and its influence on student achievement (Creswell, 2003a). The study accepted a mixed-methods approach to improve the accuracy of the data and because it offered a more comprehensive understanding by combining information from complementary sources. The study also aimed to avoid the biases that single-method approaches are prone to, thus compensating as a strength. The major reason for using mixed-methods was to develop the analysis and build upon the quantitative and qualitative data.

The study utilised the quantitative method as a scientific methodology based on a rational 'logic and measurement approach'. The quantitative method allowed salient dimensions and scale names identified from the literature to be adopted (Section 2.6). However, the quantitative method did not have the complete capacity to represent participants' views, which have been socially constructed in the context of their school (Mertens, 2005). Hence, a qualitative method was also incorporated into this research design.

This qualitative method focused on the overall perceptions of the participants and their school context, which is a shared approach in educational research (Weaver & Olson, 2006).

Additionally, the qualitative method enabled this study to understand the participants' perceptions as they are "internally experienced, socially constructed and interpreted" (Sarantakos, 1993, p. 36), based on their school experience. To achieve a deeper understanding of how meanings were constructed by the participants, the study acknowledged that each participant's perception of the implementation of the systemic school improvement approach was valid and worthy of study (Crotty, 1998; Holloway, 1999; Phyte, 1997). Consequently, the qualitative method was useful because a school's implementation of a systemic school improvement approach, within the school context, has been internally influenced by the participants' personal values and beliefs, and externally influenced by their professional values and practice (Schwandt, 2000). Further, Cole (2006) argued that qualitative methods are "more concerned about uncovering knowledge about how people feel and think in the circumstances in which they find themselves, rather than making judgments about whether those thoughts and feelings are valid" (p. 26).

3.2 Methodology

Selecting an appropriate research methodology was important for ensuring that the research questions addressed were relevant to the overall purpose of this study. This inquiry adopted a case study within a metropolitan Catholic school system. A case study was considered appropriate for the following reasons:

i. The school context was of central importance, and multiple perspectives needed to be recognised (Yin, 2003).
ii. The research questions explored the 'how' or 'why' practices occurring in schools where the researcher had little control over the variables (Yin, 2009).
iii. A new body of knowledge would build school evidence and understanding that was not obtainable via other research methods (Stacks, 2016).
iv. It covered school contextual conditions that were highly pertinent to the research questions under investigation (Pendleton, 2013; Yin, 2009).

The case study, as a methodological tool, produced contextual knowledge, which is particularly important in a school-system-based study that reflects an empirical inquiry within its school context. Data collected from the individual case studies were used to address the research question and to contribute to the growing evidence, as shown in the literature, on school improvement. The insights gained from those working in this metropolitan Catholic school system who had implemented the systemic school

improvement approach contributed to a greater understanding of what influenced student achievement, and how this was influenced. In this way, attention was focused on the real issues that arose from implementing a systemic school improvement approach, which may contribute to a new body of knowledge on systemic school improvement and produce a new paradigm. The case study defined the research questions and selected cases, and determined the collection and analysis of data. Therefore, the main reason for using a case study methodology was to contribute to an understanding of the research question within an in-depth investigation of a bounded system (Creswell, 2008; Merriam, 1998; Miles & Huberman, 1984).

3.3 Sample Selection

Purposive selection was utilised in this study (Cole, 2006; Gall, Gall, & Borg, 2003; Merriam, 1998). The main reasons for using purposive selection were (a) to concentrate on participants with the particular characteristics that would best inform this study and (b) provide a very specific range of participants with different viewpoints. The research sites selected were considered school contextual and, therefore, suitable for answering the research question (Creswell, 2008). Contextually, school study sites are those from which one can learn about the research problem.

Participants at the various school sites were selected if they had engaged with a systemic school improvement approach. The schools in the two regions from the metropolitan Catholic school system selected for this study had engaged in such a systemic approach since 2007. Both regions also shared similar traits: the school's leadership teams and teaching staff were similar in terms of age, gender ratio, roles, and years of employment in their current school. The selection of two regions provided a significant number of potential secondary schools for study—that is, 28 of the 38 (74%) of the secondary schools within the school system. This allowed for various participant perceptions to be recorded, allowing common themes to be identified across the twenty-eight school sites. This study set out not only to discover the central themes from the literature, but also to understand the various participants' perceptions and their unique school contexts.

To be selected for this study, the secondary Catholic school needed to:

i. be registered with the Board of Studies as a Years 7 to 12 school (as distinct from a Years 7 to 10 school or a Years 11 and 12 school only);

ii. have completed at least one five-year cyclic review of the school system improvement approach; and

iii. have high and low student learning gains, as indicated through external standardised tests.

Nineteen out of twenty-eight secondary schools across the two regions were identified as fulfilling these criteria. These secondary Catholic schools were selected so as to provide consistent context-bound sites for comparison.

To help understand the research problem and questions, secondary Catholic school staff were considered to be the best source of data, given their qualifications, experience, and leadership capabilities. Such personnel were considered to be specialists in terms of their experience in, as well as their perceptions of, participating in the systemic school improvement approach. Nineteen school study sites in two regions from a metropolitan Catholic school system were sufficient for the first phase of the study: the administration of a questionnaire.

The second phase of the study involved a document analysis and semi-structured interviews. Six secondary Catholic schools were purposively selected across two regions. These six schools were selected based on their school net student learning gain, while also considering their socioeconomic status (SES). The relationship between SES and student achievement has been argued for years in studies such as the 'Longitudinal Survey of Australian Youth' (Rothman, 2003). Nevertheless, the six secondary Catholic schools were selected based on their school student learning gains or student achievement because of the research question. Student learning gain or growth is a measure of achievement that focuses on student or cohort scores from year to year (O'Malley et al., 2011).

The learning gain component of student achievement was determined from analysis of the secondary school National Assessment Program–Literacy and Numeracy (NAPLAN), School Certificate, and Higher School Certificate results. Schools were ranked from highest to lowest learning gain across the two regions. This revealed a dominance of girls' schools in the highest net learning gain ranks. The researcher felt that this dominance would not be consistently representative of the three school types—girls, boys, and co-educational in the metropolitan Catholic school system. In the first phase of the study, there were five girls, eight boys, and six co-educational secondary Catholic schools involved across the two regions. For the second phase, six of these schools were selected— one each from the

highest and lowest rated learning gain for girls, boys, and coeducational schools. The reason for adopting schools with the highest and lowest learning gain for student achievement was to obtain the widest possible range of participant perceptions. This was considered the best approach for gaining genuine insight into the perceptions of the influence of a school system on student achievement.

3.4 Research Participants

The research participants were considered in terms of 'unit of analyses', sometimes referred to as 'hierarchical modelling' (Draper, 1995). This is relevant in education research where, for instance, individual student achievement data may be used to determine overall classroom performance, allowing inter-classroom comparisons. In this study, there were three components of analysis: first, the individual participants in the schools; second, the HLG and LLG schools from two regions; and third, school artefacts (e.g. documents).

The researcher purposively selected individual participants, based on judging which individuals would be best able to provide the desired information (Gall et al., 2003; Palinkas et al., 2015). Participant selection considered how each participant could inform the research question and the sub-questions that emerged during the research (Cohen & Manion, 2004). This enabled the study to "discover, understand and gain insight from those from which most can be learned" (Merriam, 1998, p. 61).

In total, three groups of participants were recruited for this study:

i. secondary leadership teams comprising principals, assistant principals, and coordinators from the schools selected in two regions of a metropolitan Catholic School system;
ii. secondary classroom teachers, and
iii. senior metropolitan Catholic school system central and regional personnel who were not attached to particular schools.

Individual participants from these three groups were selected as they were considered to possess the best knowledge and experience of the systemic school improvement approach within the metropolitan Catholic school system.

A summary of the case study sites, research participants, and data-gathering methods is presented in Table 3.2. The specific reasons for selecting the various groups of participants are explained in the following sections.

Table 3.2 Outline of the proposed case study sites, sample secondary schools, and participants

Case Study Site Metropolitan Catholic school system	Sample Secondary Schools	Participants	Data Gathering Strategies		
			Questionnaire	Semi-structured Interview	Documentary Analysis
Educational Region A	**11**	Principal Assistant Principal Religious Education Coordinator Curriculum Coordinator Teachers x 2	11 11 11 11 22	3 schools with highest learning gain 1 Girls only 1 Boys only 1 Coeducation ----------	Same 3 schools with highest learning gain. School Review & Improvement documentation ---------
Educational Region B	**17**	Principal Assistant Principal Religious Education Coordinator Curriculum Coordinator Teachers x 2	11 11 11 11 34	3 schools with lowest learning gain 1 Girls only 1 Boys only 1 Coeducation	Same 3 schools with lowest learning gain. School Review & Improvement documentation
Metropolitan Catholic Schools		Metropolitan Catholic Schools Personnel	8		
TOTAL	**28**		**152**	**6**	**6**

3.4.1 Secondary school leadership team

A school leadership team is typically a group of senior educators, coordinators, classroom teachers, and other staff members who make important governance decisions in a school and/or lead and coordinate school improvement initiatives. The leadership team in this study consisted of each school's principal, assistant principal, and coordinators (Table 3.2).

Given the accountabilities of their roles, principals, assistant principals, coordinators, and classroom teachers were considered to be in excellent positions to share their perceptions of a systemic school improvement approach.

Many secondary leadership teams, depending on the size of the school, include other members of staff with specific responsibilities, including pastoral care coordinators, administration coordinators, and teaching and learning coordinators. As these positions are school-based appointments and can vary from school to school, these staff members were invited to participate in the questionnaire at the discretion of their principal, because they were considered to be the most aware of the systemic school improvement approach being investigated.

3.4.2 Secondary classroom teachers

As the literature has shown, the classroom teacher has the greatest in-school influence on student achievement (Caldwell & Spinks, 2008; Dinham, 2008; Hattie, 2003; Marzano, 2003; Rowe, 2007). Therefore, classroom teachers from each secondary school were selected as participants. Classroom teachers were deemed eligible if, first, they taught across Years 7 to 12; second, they had been teaching in the school since the introduction of the systemic school improvement approach in 2007; and third, were involved in the approach and had participated in one of its external reviews. A total of fifty-six teachers were selected. The principal of the school was invited to select the classroom teachers deemed most eligible, who then had the option to accept or decline the principal's invitation to participate in the study.

3.4.3 Metropolitan Catholic school system office personnel

Among the metropolitan Catholic school offices, there were senior personnel in the regional and central offices who were in regular contact with schools. In each region, the regional consultants, secondary religious education and curriculum education officers/leaders of learning, and the head of secondary curriculum from the central office were invited to participate. These participants had been directly involved with a systemic school improvement approach and, therefore, were in a strong position to comment on it and the influence it had had on student achievement.

The school sites and participants were broadly representative of the metropolitan Catholic secondary school system. They allowed the development of insights into the reality of the dynamics of each school, and provided an understanding of the variations that exist among schools and across the two selected regions. Further, the selection process supported the case study focus on reliability and trustworthiness (Bassey, 1999a, p. 75), which are addressed later in this chapter.

3.5 Mixed-Methods Approach

In line with the pragmatic research paradigm, a mixed-methods approach to data collection and analysis was used. The mixed-methods data-collection strategies for this study included:

i. a questionnaire with closed and open items;
ii. a document analysis; and
iii. an individual semi-structured interview.

An overview of the mixed-methods approach is shown in Table 3.3.

Table 3.3 Overview of the mixed-methods approach

Questionnaire	• Parts A, B, C	• Quantitative Analysis – statistical descriptive analysis
	• Part D	• Qualitative – Thematic Analysis
Document Analysis	• Strategic Improvement Plans • Annual Improvement Plans • Annual self-review ratings	• Qualitative – Thematic Analysis
Semi-structured Interviews	• 3 HLG school principals • 3 LLG school principals	• Qualitative – Thematic Analysis

The mixed-methods sequential explanatory design used two distinct phases (Creswell, Plano Clark, Gutmann, & Hanson, 2003). The first phase involved the collection and analysis of quantitative data. The second phase collected and analysed qualitative data, which helped to explain or elaborate on the quantitative results. The sequential explanatory approach allowed the quantitative data to be used to develop a general understanding of the research problem and identify important themes. The qualitative data refined and explained those statistical results by exploring individual participants' views in greater depth (Creswell, 2003b; Tashakkori et al., 1998).

The major benefit of a mixed-methods sequential explanatory design is in overcoming the limitations of any single research design. The benefits included, first, the use of complementary data, which allowed qualitative data to enhance the quantitative findings. The research design sought to elaborate, enhance and clarify results from one with the results from the other method. Second, the collection of data allowed for triangulation to offset the biases of each method. This helped to confirm, validate or corroborate the results and conclusions of the research. Third, using one research method to inform the preparation of the other method was adopted. For example, in this study, the questionnaire and document analysis were used to design the semi-structured interviews. Fourth, the initiation of the discovery of paradox and contradiction, as well as new perspectives, allowed for the modifying of questions or findings from one method with those of the other method and, finally, expansion of the breadth and range of inquiry by using different methods from different inquiry approaches (Bazeley, 2008; Liamputtong & Ezzy, 2005) provided more evidence to enhance the study. A mixed-methods approach provided a more comprehensive understanding of the research problem than either quantitative or qualitative could do singularly.

Accordingly, the case study research methodology was designed to understand participants' perceptions of how a systemic school improvement approach influenced student achievement. In addition, the findings that emerged from this case study could be used as a guide for enhancing a systemic school improvement approach at both the school and system levels. This investigation may identify areas that are done well and others that are not done well. Each of these data-collection strategies is discussed in the following sections.

3.5.1 Questionnaire

In the first phase of the research design, a questionnaire was used to collect and analyse the initial data. The questionnaire was designed, first, to obtain appropriate data; second, to obtain data that was amenable to analysis and comparable to that of other research; third, to minimise bias in formulating and asking questions; and finally to make questions both engaging and varied (Creswell, 2008).

The questionnaire was designed to collect data on how a systemic school improvement approach influenced student achievement among a moderately large representative group. The questionnaire explored whether participants perceived that such an approach had influenced student achievement and, if so, how.

The questionnaire was designed with both closed and open questions to minimise bias and prevent participants from being influenced to give responses that conformed to a particular worldview. The closed-format items used the following five-point Likert scale: 'Strongly Agree'; 'Agree'; 'Disagree'; 'Strongly Disagree'; and 'I cannot make a valid judgement'. This simple format was adopted to allow rapid survey completion and efficient analysis of results. It was also considered the best approach for testing the major research question. The option of 'I cannot make a valid judgement' was provided in an attempt to reduce no opinions. This option prevents the results from being distorted by participants who hold an impartial opinion but feel compelled to give a non-neutral response. However, a neutral option can sometimes lead to clustering of results around the questionnaire item (Neuman, 2000).

The use of open-ended questions was considered essential for the questionnaire. These questions were worded in such a way as to advance the research question, to allow participants to express a wide-range of perceptions, and to reflect personal differences by allowing the citation of examples. Open-ended questions facilitated the understanding of participants' views and were a way of complementing, personalising, and contextualising the

Likert-scale responses (McMillan & Schumacher, 2001a). Neuman (2000) believed an over-reliance on closed designed questions could possibly distort results, but this was avoided by collecting both quantitative and qualitative data as part of the mixed-methods approach adopted by this study.

The questionnaire was designed to assess the salient dimensions and scale names identified in Chapter 2 (Section 2.6 The Research Conceptual Framework) employing an intuitive-rational approach (Hase & Goldberg, 1967). Hase and Goldberg (1967) and Turkington (2004) argued that the intuitive-rational approach to creating scale names compared well with other scale-construction strategies, including empirical, theoretical and factor analytical methods. Such an approach relies on the researcher's and critical experts' intuitive consideration of the salient dimensions, and involves three basic steps:

i. Identify the salient dimensions and scale names.
ii. Identify the question items.
iii. Pilot the questionnaire through field testing.

This study adopted a questionnaire as a data-collection approach for numerous reasons (Burns, 2000; Neuman, 2006). First, it was less expensive to administer compared to one-on-one interviews, particularly when responses from a relatively large sample set were desired. Second, it was efficient in collecting the appropriate data for the study. Third, each participant received the same questionnaire items, expressed in precisely the same manner; hence, responses were standardised, which helped make the data comparable and amenable to analysis, and increased its reliability. Moreover, participants were permitted to answer questions in their own time and at their own pace, avoiding the anxiety or humiliation that can sometimes come with direct interaction. Fourth, the questionnaire was designed for self-administration and online completion; hence, it was possible to obtain a larger sample set. Finally, the confidentiality and anonymity of the questionnaire encouraged truthful responses.

The limitations of questionnaires are well documented (Burns, 2000; Creswell et al., 2003). The potential limitations for this study included the difficulty of securing adequate responses because of the notorious low response rate to questionnaires. Other problems are that questionnaires can easily be sent on to someone else so a response may not in fact be from the target population; and ambiguous, incomplete, or inaccurate information cannot be easily followed up and must be accepted as given (Burns, 2000). Alternatively, open-ended

questions can produce data that cannot be merged easily for systematic analysis and there is no opportunity to acquire supplementary observational data. Finally, the possibility of misinterpretation of the questions by the participants is high, as it is extremely difficult to formulate a series of questions whose meanings are clear to every reader. The researcher may know exactly what is meant by a question but because of poor wording or ambiguity, a significantly different interpretation might be made by participants. Many of these limitations are discussed in Chapter 4: Development and Validation of the Questionnaire. The need for conducting a pilot questionnaire is also discussed in Chapter 4.

In addition, with online questionnaires the researcher is not present to clarify questions. In this study, I was unable to encourage participants to complete the questionnaire, collect additional information while administering the questionnaire, or know the circumstances under which the questionnaire was being completed. Given these limitations, I decided to conduct a document analysis and individual, semi-structured interviews as a way of supplementing the questionnaire data and following up on trends and emerging themes from the data.

In summary, the questionnaire design gave clear and direct item statements with an appropriate mix of open and closed questions, mapped against the salient dimensions and scale names that were directed and framed by the literature review in Chapter 2.

The next phase of the research explored the themes identified during analysis of the questionnaire data, and the identification of other potential school-based mediating variables via an analysis of school documentation relating to a systemic school improvement approach.

3.5.2 Document analysis

In the second phase of the sequential explanatory design, a document analysis was conducted to explain and elaborate on the quantitative results obtained in the first phase.

The study rationale for using a document analysis related to the value of using documents in a case study approach. Document analysis, in this study, was used as a means of triangulation in order to provide complementary evidence that validated the findings of the questionnaire. It reduced the impact of potential biases that might have existed if only a single research method—such as this study's questionnaire—had been used. An important element in the rationale for using document analysis for this study was to provide

background and context to the case study. It also provided additional questions to be asked and supplementary data, as well as provided a means of tracking change and development, and verification of findings from other data sources.

The documents were identified from the results of Part B of the questionnaire, which sought responses on the awareness, usefulness, and effectiveness of a systemic school improvement approach. The document sources represented the three highest of the HLG schools in the two regions and the three lowest of the LLG schools in the two regions, and the six principals represented girls', boys', or coeducational schools. Lack of detail in some documents meant that they failed to provide sufficient information to contribute to the research questions, which is one limitation with using document analysis. Also, while the majority of the school documents were available, some were not retrievable because they had been misplaced by the school when transitioning from hard copies to online documents for record-keeping, which occasionally occurs (Yin, 1994).

Document analysis in the study offered advantages that clearly outweighed its disadvantages (Bowen, 2009). The documents used were available and easily obtainable from the secondary schools participating in the study. The document analysis was cost effective because the data were already contained in the documents and merely required analysis. Also, document analysis can counter a researcher's influence on a participant's response (Bowen, 2009). Other advantages that emerged from the study were the stability of the documents, allowing them to be repeated for analysis, and their exactness where content accuracy was beneficial in the research process, and there was broad coverage of the targeted time span (Yin, 1994).

In short, the strengths of document analysis are substantial. Document evidence also contributed to the preparation of questions for the semi-structured interviews.

3.5.3 Semi-structured interviews

In addition to the second phase of the sequential explanatory design, semi-structured interviews were used to follow up themes and issues that emerged from the questionnaire and documentary analysis.

In this study, six secondary principals, three from HLG and three from LLG schools across the two regions, participated in an individual semi-structured interview to obtain their

perspectives on the research question. The six principals represented girls, boys, and coeducational schools.

The main purpose of the semi-structured interviews with principals was to obtain information to complement and triangulate the questionnaire and document-analysis data.

The main limitations of semi-structured interviews are that they are time-consuming and it can also be expensive to engage an interviewer. The interviewer requires expertise and experience in conducting successful interviews (Cohen & Manion, 2004) and ensuring that interview responses are recorded accurately. As interviewers work mostly independently there is a risk that they may deviate from the interview guide, be inattentive, or take shortcuts.

The study used an interviewer for reasons discussed later in this chapter (Section 3.8.2). The interviewer was provided with a guide for practising with the pilot interviews. There were instruction sessions before, during, and after interviews that were intended to brief and debrief on realistic standards for the quantity and quality of the interviewers' work. The aim of such sessions was to monitor the interviewer's performance and to recognise problems early so that immediate remedial action could be initiated. Therefore, the study established regular instruction sessions for monitoring interview performance and administered pilot interviews with two regional consultants and three principals who were not participants in the main study interviews. They were digitally recorded, monitored, and evaluated for different response patterns.

3.6 Analysis of Data

This study investigated and analysed the individual perceptions of participants and the themes that reflect widely shared, socially constructed meanings from the quantitative and qualitative data collected from the questionnaire, document analysis, and semi-structured interviews.

3.6.1 Quantitative analysis of data

Questionnaire data were statistically analysed. Descriptive data (means, medians, ranges, standard deviations, kurtosis and skewness) were obtained to indicate areas requiring closer examination by document analysis and semi-structured interviews. The final set of quantitative data analyses used Cronbach's alpha of scale reliability (DeVon et al., 2007; Santos, 1999; Trochim & Donnelly, 2001).

3.6.2 Qualitative analysis of data

The study used qualitative analysis for the open-ended questions in Part D of the questionnaire, the document analysis, and for the semi-structured interviews. The researcher analysed data using a thematic analysis approach, which allowed themes to report the perceptions of the participants.

Thematic analysis is "a method for identifying, analysing and reporting patterns within data" (Braun & Clarke, 2006, p. 79). The study utilised the six common steps used in thematic analysis to ensure clarity and rigour. These are:

i. **Familiarisation with data** – open-ended questionnaire responses, document analysis and semi-structured interview transcripts.
ii. **Generating initial codes** – divide the text or segments of information into the salient dimensions and scale names.
iii. **Searching for themes** – label the segments of information with codes, reduce overlap and redundant codes and combine into potential themes.
iv. **Reviewing the themes** – confirm validity and connection to the data.
v. **Defining and naming the themes**.
vi. **Producing a chapter analysis of data findings**.

Thematic analysis, while time-consuming, is a useful method of qualitative data analysis that provides rich, detailed, and complex accounts of the data in a flexible manner (Braun & Clarke, 2006; Guest, MacQueen, & Namey, 2011; Tuckett, 2005). In addition to allowing the study flexibility, it allowed the scope of the study to expand beyond individual perceptions and provided an interpretation of the salient dimensions and scale names that was supported by the data (Guest et al., 2011).

3.7 Verifications

Verification initiatives ensure trustworthiness while also honouring the four criteria of research validity—that is, **credibility**, by adopting a mixed-methods approach, **dependability** via the regular use of an independent external auditor as critical expert, **transferability** utilising the data results from the study to allow readers to generalise from the results and findings, and **conformability** established through an audit trail (Bassey, 1999b).

Using mixed methods and a case study ensured that the information and data interpretation of this study were trustworthy (Merriam, 1998). **Trustworthiness** was provided through the following five steps in the research design. First, **triangulation** used mixed-methods to

collect data, merge data, and use the results to enhance understanding of the phenomenon being studied (Creswell, 2008). Second, **member checking** involved returning principals' interview transcripts for verification and confirmation of digitally recorded interviews (Creswell, 2008). Third, an **audit trail** was established, documenting the evidence and links between the research questions, data analysis, and the themes being extracted from the data. In this study, the audit trail comprised an account of all research decisions and activities throughout the study (Lincoln & Guba, 2000) and allowed verification to be confirmed (Merriam, 1998). Fourth, **inter-rater reliability** was administered to determine the degree of agreement and reliability among raters of the coded semi-structured interview transcripts. Fifth, **critical experts** were engaged to review different aspects of the study. The critical experts helped the researcher to develop the questionnaire and semi-structured interview questions and review the emerging data regularly throughout the study, and to identify any researcher bias that may have emerged in the interpretation of data (Merriam, 1998). The critical experts are acknowledged in the statement of authorship and in the sources. All of these verification methods ensured trustworthiness in the study.

3.8 Ethical Issues

This study was morally and professionally obliged to adhere to ethical protocols. Ethical guidelines and approvals from the relevant authorities were obtained. Participants' confidentiality and anonymity was maintained. The participants' right to access research data was considered, as was data recording, security, and disposal. Finally, the ethical issues regarding the researcher's senior position at the metropolitan Catholic school system is discussed in the following sections.

3.8.1 Ethical approval

An ethics approval application for the research was submitted to the Human Research Ethics Committee (HREC) of the Australian Catholic University (ACU). The committee approved the project, determining it as 'minimum risk to individual participants'. The Executive Director's delegated representative from the metropolitan Catholic school system approved this study to be conducted in two regions of the school system. The ethical approvals by HREC are shown in Appendix A and the metropolitan Catholic system approval in Appendix B.

3.8.2 Researcher's senior role

The researcher holds a senior role in one of the three regions of the metropolitan Catholic school system and is a member of its Senior Leadership Team. To minimise any ethical issues or the likelihood of responses being influenced by the researcher, research sites were drawn from only two of the three regions. And to minimise the influence of the researcher, a research assistant was engaged to collect data, a strategy approved by the HREC of the ACU. The researcher did not engage in data collection for reasons of confidentiality, anonymity, and to protect the identity of the group of schools and individual participants. It was also deemed important to ensure that the individual participants' perceptions had not been influenced during data collection. Once all data was collection the researcher conducted all the data analysis, provided results and identified key findings.

3.8.3 Informed consent

Informed consent requires that research participants are informed of the nature and consequences of the research. This involves a proper respect for human freedom where, "first, subjects must agree voluntarily to participate; second, their agreement must be based on full and open information" (Christian, 2006, p. 144).

The researcher sent a letter of invitation to participate in the study to each person in the sample, identifying the particular phase in which they would be participating. For questionnaire participants, the letter was contained on the questionnaire itself. For the semi-structured interviews, an introductory letter and consent form was used. Participants were advised that they could withdraw at any time without consequence. All letters were submitted for ethical and metropolitan Catholic system approval.

3.8.4 Confidentiality and anonymity

This study acknowledges Neuman's (2000) posit that ethical research must balance the essentials of the researcher and the worth of acquiring knowledge against the values of not interfering in the lives of others.

Therefore, individual participants received written assurances of both confidentiality and anonymity in the invitations to participate in this study. Undertakings were given about who could access the data collected and how it would be used and stored to preserve confidentiality.

For the questionnaire, anonymity was preserved by ensuring that no questions elicited clues to participants' identities. The research assistant administrated the questionnaire, collected the set of schools' documents, and conducted the semi-structured interviews as an external interviewer. The research assistant removed any identifying information from the questionnaires, documents, and interview transcripts prior to returning them to the researcher. These measures had the added advantage of creating a degree of separation between individual participants, groups of schools, and the researcher. This separation minimised the possibility of any perception of obligation to participate, or of responses being distorted due to the influence of the researcher's senior role.

The following steps were taken to ensure confidentiality and anonymity:

i. Participants were asked not to sign or write their name on the questionnaire or to identify the school or school location.
ii. Participants' background information was coded by the research assistant before being passed on to the researcher for analysis.
iii. No signed consent form was requested for the questionnaire, as participants' completion of the questionnaire indicated consent. Only participants in the semi-structured interviews were required to sign consent forms, which were retained by the research assistant.
iv. The research assistant allocated usernames and passwords for participant access to the online questionnaire. The researcher was not privy to this information.
v. Semi-structured interview transcripts were coded for each school.

3.8.5 Data recording, security and disposal

This study took specific precautions to guarantee that the research data did not accidentally, or unintentionally, fall into the wrong hands or become public (Berg, 2004).

The questionnaire data were entered into a password-protected website designed by the research assistant. The research assistant enabled access to the website only for the specific purposes of collecting data and checking responses. The researcher only had access to the coded data.

Additionally, the research data files were stored on the ACU premises in the office of the researcher's principal supervisor, as stipulated by the ACU's HREC guidelines.

3.9 Limitations

The limitations of this study are summarised as follows:

i. Despite taking all practical measures possible, there may have been some influence on participants' responses due to the researcher's senior system leadership role. However, confidentiality and anonymity were maintained throughout the entire study; practical measures were introduced to maximise participants' readiness to reply in a direct and truthful manner; and the mixed-methods approach reduced the possibility of bias arising from professional relationships with participants.

ii. The findings should be considered to be illustrative and generalised rather than fully descriptive of the population of schools, given that they were obtained by a case study approach. Generalisability refers to the transferability of findings from one setting to another (Yin, 2003). This depends on the context in which the study is conducted and the contexts to which the findings can be applied. This study aimed to provide a contextual description to enable the findings to be transferable and have implications for policy and practice and areas for further study.

iii. Finally, the current regime of a systemic school improvement approach is relatively new, and its impacts on student achievement, teacher capacity, school leadership capacity, and school culture have never before been assessed. A systemic school improvement approach in the metropolitan Catholic School system was implemented in 2007. Although systemic school improvement research has a long history, studying a systemic school improvement approach required a paradigm shift to systems thinking.

3.10 Conclusion

This study used the pragmatic paradigm and mixed-methods approach with case study methodology to investigate perceptions of a systemic school improvement approach.

A mixed-methods approach was used to highlight the assumptions regarding the nature of knowledge that are driven by a pragmatic paradigm, and how best to interpret the interactions of participants in social groups. This position was used in the study context to determine the extent to which a systemic school improvement approach could influence student achievement, based on the personal perspectives of participants.

The study methodology delved beyond the participants' lived experiences to a more practical reflection of perceptions that were based on consequences. The study was selected not only to situate the research in the real world, but also to understand the issues around school learning gains in the NAPLAN, School Certificate, and HSC examinations. Therefore, the focus was on providing data for the research problem and sub-questions related to this study. This study considered how the participants perceived a systemic school improvement approach influencing student achievement.

The research design also examined issues associated with verification, and considered the ethical issues involved. To recognise the main issues, the mixed-methods approach included developing a questionnaire, administering first a pilot questionnaire and them a final questionnaire, followed by a document analysis to collect background information and triangulate the main data-collecting strategies. Finally, semi-structured interviews with principals explored in greater depth the themes emerging from the questionnaire and determined any other potential school-based mediating variables that influenced student achievement.

The next chapter examines how the main questionnaire was developed and validated.

CHAPTER 4

DEVELOPMENT AND VALIDATION OF QUESTIONNAIRE

4.0 Introduction

In this chapter I discuss the development and validation of the main questionnaire used to collect data as the first phase of the research design. The first phase entailed initial quantitative data collection and analysis to identify the key issues. Qualitative methods were then employed to capture richer explanatory data to help provide a deeper understanding of the participants' perceptions. The rationale for this approach was to provide the researcher with a general overview of the research problem; then further analysis (especially through qualitative data collection) refined, extended, and more fully explored the quantitative results in light of the research questions.

4.1 Development of the Questionnaire Instrument

The development of the questionnaire was guided by Dorman's definition of instrument development as "concerned with standards of judgement, rules or principles that can be used to guide instrument development" (Dorman, 1994, p. 115) and used the intuitive-rational approach for questionnaire and scale development discussed in Chapter 3 (Section 3.5.1 Questionnaire) (Hase & Goldberg, 1967).

The intuitive-rational approach is reliant on the researcher's and other critical experts' instinctive identification of the salient dimensions; in this case, the salient dimensions and scale names identified in the literature review in Chapter 2. Throughout the development and validation of the questionnaire, past supervisors and co-supervisors, the research assistant, and critical experts all established content validity. Content validity determined the questionnaire items were suitable and applicable to this study's purpose. The intuitive-rational approach to questionnaire development involved three steps:

i. Identify the **salient dimensions**.
ii. Identify the items and develop **scale names**.
iii. **Pilot** the questionnaire instrument through field testing.

The questionnaire was developed in five main phases:

i. The first phase was content validity and involved the identification of salient dimensions, which captured the broad field of the research study. The dimensions were selected to ensure that each dimension was conceptually distinct, while at the same time the whole set of dimensions provided full coverage of the key concepts and questions directed and framed from the review of the literature in Chapter 2 (Section 2.6, The Research Conceptual Framework). This was achieved by undertaking a literature review which clearly defined the conceptual framework for a systemic school improvement approach that assessed the content validity of the questionnaire.

ii. From the literature review in Chapter 2, three salient dimensions with eight scale names were identified as conceptually independent and significant enough to allow the development of the questionnaire instrument, as shown in Table 4.1.

iii. Question item writing was the next phase, ensuring that each scale name measured only the salient dimension to which it was assigned. The principal aim at this phase was to develop question items that were readable, clearly organised, reliable, and unambiguous in language used (DeVon et al., 2007; Trochim & Donnelly, 2001) and provided a clear link to the conceptually different and salient dimensions from the literature review.

iv. Field testing involved administering the questionnaire to a sample of the target population as a pilot questionnaire.

v. The field testing through a pilot questionnaire of the question item performance assisted in modifying the question items as required for the main questionnaire.

Table 4.1 Description of scales for pilot questionnaire instrument and associated information

SALIENT DIMENSION	SCALE NAME	SCALE DESCRIPTION	REVIEW OF LITERATURE	NUMBER OF ITEMS
DIRECTION & PURPOSE	Vision, mission, moral purpose	The extent to which moral purpose, vision, and mission give direction and purpose.	(Fullan, 2005, 2010), (Hargreaves & Shirley, 2009), (Mourshed et al., 2010), (Bezzina, 2008, 2010), (Duignan, 2006), (Barber & Mourshed, 2009), (Hopkins, 2013).	9
BUILDING CAPACITY	Building principal capacity	The extent to which building principal capacity influences student achievement.	(Dinham, 2008), (Robinson et al., 2008), (Jensen et al., 2012), (Robinson, 2007), (Leithwood et al., 2008), (Reeves, 2008).	10
	Building teacher capacity	The extent to which building teacher capacity influences student achievement.	(Hopkins, 2005), (Timperley, 2008), (Sergiovanni, 2000), Hattie, 2003), (Barber & Mourshed, 2007), (Mourshed et al., 2010), (Harris, 2009), (Crowther et al., 2008), (Marzano, 2003), (Rowe, 2007), (Dinham, 2008, 2016).	7
	Collaborative practices	The extent to which collaborative practices influence student achievement.	(Senge, 1990), (Duignan, 2009), (Dufour & Eaker, 1998), (Stoll & Louis, 2007), (MacBeath & Dempster, 2009), Fullan, 2008), (Caldwell & Harris, 2008), (Harris, 2002), (Hargreaves, 2011), (Jansen et al., 2011), (Wheatley, 1999).	12
	Building system capacity	The extent to which systemic structures, policies, and processes build capacity across the system.	(Hopkins & Higham, 2007), (Fullan, 2004), (Jansen et al., 2011), (Hopkins, 2006, 2013).	3
ADAPTABILITY FOR SUSTAINABILITY	Use of data effectively	The extent to which the use of data in planning and monitoring processes adapts to sustain student achievement.	(Forster, 2009), (Fullan, 2008), (Harris et al., 2008), (Campbell & Levin, 2009), (Sharratt and Fullan, 2016).	12
	Planning for improvement	The extent to which planning for improvement influences adaptability for sustainability.	(Harris, 2002), (Dinham, 2008), (Mooney & Muasbach, 2008), (Downey, 2008).	13
	Monitor for continuous improvement	The extent to which systemic structures, policies, and processes ensure continuous improvement.	(Leithwood et al., 2006), (Bamford, 2007), (Harris et al., 2008), (MacBeath, 2006), (Cuttance, 2005), (Mourshed et al., 2010).	11

4.2 Pilot Questionnaire Development Criteria

The pilot questionnaire took into account the criteria that guided the questionnaire development (Babbie, 2004). The criteria for the pilot questionnaire were:

i. Consistency with the salient dimensions and scale names emerging from the literature review in Chapter 2.

ii. Economy in terms of the time to administer, item difficulty, clarity of wording and understanding, and scoring each of the questionnaire's question items.

iii. No ambiguity or vagueness, thereby providing some confidence that it measures what it claims to measure.

iv. Piloting with a sample population not involved in the main study for content and face validity.

4.3 Pilot Questionnaire Instrument Development and Procedure

The development of a pilot questionnaire was considered important in the first phase of the main questionnaire. This study did not use a previously developed or piloted questionnaire because there was no questionnaire available to collect data on a systemic school improvement approach that influenced student achievement. Consequently, the questionnaire was designed and piloted to ensure that the items were written to take into account the research questionnaire criteria outlined in Section 4.2 above.

Part A collected the basic demographic data on school characteristics (enrolment size, type of school) and participant characteristics (age, gender, total number of years employed within metropolitan Catholic School system, total number of years employed in current school, current position). Participants were asked to choose from a list the appropriate responses relevant to their particular context. The demographic data were analysed using descriptive analysis to identify various characteristics of the participants within the target population.

The purpose of **Part B** of the questionnaire was to collect data to answer the following research sub-question:

> How do principals, assistant principals, coordinators, and classroom teachers perceive the awareness, usefulness, and effectiveness of a systemic school improvement approach?

Part B consisted of three items, which asked participants to describe the way their school conducted the systemic school improvement approach in terms of their perception of the level of 'awareness of…', 'usefulness of...' and 'effectiveness of...'. The three items had a five-point level rating. The scale response level was designed acknowledging that a system school improvement approach was not voluntary and was developed to be aware, useful and effective for schools. Therefore, for the level of **awareness** participants could choose from 'unaware' to 'nearly all aware'. Similarly, with the level of **usefulness** participants could choose from 'no use' to 'all staff have used' statements. In regard to the level of **effectiveness**, the rating was from '1: not effective' to '5: highly effective'. These three sets of items gave an overall indication of how the systemic school improvement approach was

perceived by participants and helped identify trends, patterns, and themes that could be further explored in the document analysis and semi-structured interviews.

Part C of the questionnaire endeavoured to advance the understanding of the following research sub-question:

> How do principals, assistant principals, coordinators, and classroom teachers perceive a systemic school improvement approach providing direction and purpose, building capacity, and adapting for sustainable improvement?

Part C of the questionnaire consisted of 77 statement items in a single group based on the three salient dimensions shown in Table 4.2. Within each salient dimension a scale name emerged with associated question items.

Table 4.2 Part C questionnaire overview

SALIENT DIMENSION	SCALE NAME	QUESTION ITEMS
DIMENSION 1: DIRECTION AND PURPOSE	Vision, mission, moral purpose	1 to 9.
DIMENSION 2: BUILDING CAPACITY	Building individual capacity	
	- Building principal capacity	10 to 19
	- Building teacher capacity	20 to 26
	Building collective capacity	
	- Collaborative practices	27 to 38
	- System leadership	39 to 41
DIMENSION 3: ADAPTABILITY FOR SUSTAINABILITY	- Use of effective data	42 to 53
	- Planning for improvement	54 to 66
	- Monitoring for continuous improvement	67 to 77

Part C items employed a five-point rating response: 'Strongly Disagree', 'Disagree', 'Agree', 'Strongly Agree, 'I cannot make a valid judgement'. This scale of response was adopted acknowledging that a system school improvement approach was not voluntary for schools to engage with and was efficient for coding and comparing findings. The final rating response 'I cannot make a valid judgement' was a methodological choice in an attempt to identify those participants who had insufficient understanding or experience with a systemic school improvement approach to make an informed judgement. This non-response rating prevented the misrepresentation of results, which is possible when participants who honestly hold a different perception, or none at all, are forced to give a response that does not reflect their true opinion. Forcing a response sometimes can lead to clustering of opinion around one of the options (Neuman, 2000).

Part D of the questionnaire has five short-answer responses designed to allow participants to share their perceptions of the systemic school improvement approach in an open format. These questions focused on the major research question **'How does a school system**

influence student achievement?' and allowed participants to express a broad range of perceptions, drawing upon their experiences by asking for explicit examples. Including short-answer questions in the questionnaire allowed qualitative data to emerge, thus preventing a dependence on fixed closed questions, which can cause distorted results (Neuman, 2000).

While the questionnaire was guided by the criteria for the development of the instrument in an attempt to address the research question and sub-questions developed in Chapter 1 and Chapter 2, they do follow the salient dimension direction outlined in Table 4.2 above.

4.4 Piloting of the Questionnaire

The purpose of piloting the questionnaire was to develop and test instrument reliability and reduce question ambiguity or vagueness in the main questionnaire. The piloting of the questionnaire ensured that both the design of the questionnaire and the question items had reliability, content and face validity, clarity, comprehensiveness, and relevance to the research question and sub-questions (McMillan & Schumacher, 2001b).

4.4.1 Pilot region sample of participants

A pilot target sample of participants was selected from one population similar to the intended main questionnaire participants (McMillan and Schumacher, 2001) discussed in Chapter 3 (Section 3.5 Research Participants). Administering the pilot questionnaire in another region of the metropolitan Catholic school system—one that was not involved in the main research sample—was essential.

The pilot target sample and number of participants are shown in Table 4.3. In addition, this study included some key metropolitan diocesan personnel, also shown in Table 4.3 as the Regional Consultant and Regional Education Officer/Leaders of Learning.

Table 4.3 Pilot region target sample participants

Position	No. of School Positions	Regional Personnel	Pilot Region*	Pilot Survey Population
Principal	1	0	10	
Assistant Principal	1	0	10	
Curriculum Coordinator	1	0	10	
Religious Education Coordinator	1	0	10	
Other Coordinators	3	0	30	
Classroom Teachers	4	0	40	
Regional Consultant		1	1	
Regional Education Officer/Leaders of Learning		4	4	
Total	**11**	**5**	**115**	**120**

Note: *Ten participating secondary schools in the pilot region.

The participants were invited by emailed letter to complete Parts A–D of the pilot questionnaire. Additionally, participants were also invited to comment on the questionnaire's structure and length and to make any general comments relevant to informing the development of the main questionnaire.

4.4.2 Pilot region response rate

The pilot questionnaire response rate was 64.5%, as shown in Table 4.4. This response rate was considered reliable for the size of this sample population and provided useful feedback on the pilot questionnaire. McMillan and Schumacher (2001) and Turkington (2004) suggested that a pilot sample size should be greater than twenty so that an approximation of reliability could be achieved and would also indicate that there is a satisfactory variability in the answers for useful feedback on the pilot questionnaire. This pilot sample size met this requirement.

Table 4.4 Pilot region response rates

	Invitations emailed out	Incomplete Responses*	Complete Responses	No response	Response Rate
	26	3 (11.5%)	21 (80.8%)	2 (7.7%)	80.7%
	50	1 (2.0%)	28 (56%)	21 (42%)	56%
Overall	**76**	**4 (5.3%)**	**49 (64.5%)**	**23 (30.3%)**	**64.5%**

Note: *An incomplete response is where a respondent answered eight or fewer questions.
**Respondents were given two weeks to complete the survey. They were emailed an invitation to participate in the survey and emailed two reminders to complete the survey.

Optional questions were also added to the pilot questionnaire relating to the length of time required to complete the questionnaire, question clarity, relevance of the process, and general comments.

4.5 Pilot Region Questionnaire Analysis and Feedback

Analysis of the pilot questionnaire data was undertaken using descriptive functions. The section discussed the scale reliability and changes made to the questionnaire and gave an outline of the reasons.

4.5.1 Part A: Basic demographic information

In examining other research questionnaires (Turkington, 2004), it appeared customary to start the demographic questions 'closest' to the participant, then move out. Therefore, refinement decisions for the main questionnaire had the demographic questions starting with age, then gender, years of experience in the school system, and then years of experience in the current school. Size of school and type of school was followed by the role that best described the participant's current position.

4.5.2 Part B: School review and improvement process information

In Part B, further refinement decisions in the main questionnaire occurred with the acronym SRI, used in the stem to each of the items, extended to the full term, *'School Review and Improvement'*. This ensured that there was no confusion as 'SRI' may have a range of meanings for different participants. Therefore, each systemic school improvement approach process had a short statement to explain the meaning of the question.

In the questions relating to the level of awareness (Appendix C Part B), the third rating response option, 'Mixed, some are aware and some are not aware ...' (1.1, p. 234), was determined to be too general. Therefore, the word 'some' was replaced by 'about half' to give a more definite meaning to ensure that participants could distinguish more clearly between response options.

The final revision made in Part B of the questionnaire related to the level of effectiveness of questions (Appendix C Part B). Given that these questions used a five-point rating from 'not effective' to 'highly effective', the term 'describe' was not appropriate and was replaced by the word 'rate', as this was what the question was actually asking.

Endorsement proportions for Part B are reported in Table 4.5, Table 4.6 and Table 4.7 for **awareness, usefulness** and **effectiveness** of a systemic school improvement approach, respectively. Endorsement proportions are simply the percentages of the population sample choosing each response (Dorman, 1998).

Table 4.5 shows there was a good **awareness** of the five approach practices. The skewing of the responses to the top end of the rating for awareness questions indicated overall positive responses by participants. Because **B4.4.1 School's Annual Report to the Community** did not follow this pattern, this indicated that participants discriminated between items and that these five items were functioning well within the questionnaire.

Table 4.5 Part B: Pilot questionnaire—Endorsement proportions for the five awareness items (%)

Systemic School Improvement Approach Practice	Nearly all are unaware ...	Most show little awareness but a few are aware ...	Mixed, some are aware and some are not aware ...	Most are aware, but a few are not aware ...	Nearly all are aware ...
B1.1.1 Strategic Improvement Plan	8.33	4.17	27.08	20.83	39.58
B 2.2.1 Annual Improvement Plan	2.13	2.13	17.02	27.66	51.06
B3.3.1 annual evaluation of SRI Components	2.17	10.87	13.04	28.26	45.65
B 4.4.1 School's Annual Report to the Community	4.44	20.00	33.33	26.67	15.56
B 5.5.1 Cyclic Review	8.70	17.39	26.09	28.26	19.57

Table 4.6 shows the endorsement proportion levels for the five **usefulness** approach processes in the pilot questionnaire. They indicated that overall there was a good response to the systemic school improvement approach. The skewing of the responses towards the middle for all five of the usefulness questions indicated a strong discernment by participants to the questions**. B4.4.2 School's Annual Report to the Community** (Table 4.6) again did not follow this pattern, which indicated that these five approach processes were functioning well within the questionnaire.

Table 4.6 Part B: Pilot questionnaire—Endorsement proportions for five usefulness items (%)

Systemic School Improvement Approach Practice	No use...	Little use...	Most staff have used at some time...	Nearly all staff have used the...	All staff have used the...
B1.1.2 Strategic Improvement Plan	2.08	25.00	39.58	25.00	8.33
B2.2.2 Annual Improvement Plan	0	14.89	31.91	34.04	19.15
B3.3.2 Annual Evaluation of SRI Components	0	15.56	22.22	35.56	26.67
B4.4.2 School's Annual Report to the Community	13.04	58.70	17.39	10.87	0
B5.5.2 Cyclic Review	6.67	26.67	35.56	20.00	11.11

Regarding the endorsement proportions for the five **effectiveness** items, Table 4.7 shows that overall there was a mixed response to effectiveness of the systemic school improvement approach in the pilot questionnaire. The fact that these items did not follow this pattern indicated that these five items were functioning well within the questionnaire.

Table 4.7 Part B: Pilot questionnaire—Endorsement proportions for five effectiveness items (%)

Systemic School Improvement Approach Practice	Not Effective 1	2	3	4	Highly Effective 5
B1.1.3 Strategic Improvement Plan	4.17	4.17	31.25	45.83	14.58
B2.2.3 Annual Improvement Plan	0	2.17	19.57	63.04	15.22
B3.3.3 Annual Evaluation of SRI Components	0	6.67	31.11	42.22	20.00
B4.4.3 School's Annual Report to the Community	10.87	43.48	26.09	13.04	6.52
B5.5.3 Cyclic Review	4.55	9.09	27.27	43.18	15.91

While endorsements presented in Table 4.5, Table 4.6 and Table 4.7 show strong confirmation of a systemic school improvement approach practice, Table 4.8 shows the aggregated descriptive data for awareness, usefulness, and effectiveness for Part B of the pilot questionnaire and reflects overall internal consistency reliability.

Table 4.8 Pilot questionnaire scale statistics—Part B (N=53)

Scale name	N items in Scale	Cronbach's alpha	Scale mean	Scale SD	Mean per Scale item	Mean correlation	Skewness	Kurtosis
AWARENESS	5	0.61	18.82	3.51	3.76	0.24	-0.14	-0.66
USEFULNESS	5	0.75	15.93	3.44	3.19	0.37	0.13	-1.03
EFFECTIVENESS	5	0.79	17.55	11.43	3.51	0.43	0.12	0.55

* p<0.05 Bonferroni Inequality

Estimates of the internal consistency of the scale names were calculated using Cronbach's coefficient alpha. As shown in Table 4.8, these coefficients had two in excess of 0.70 and ranged from 0.75 for **usefulness** to 0.79 for **effectiveness**, with **awareness** being 0.61. Two scale names had a coefficient greater than 0.74, reflecting good internal consistency reliability. Overall the scale name correlations confirmed that each item made a reliable contribution to that scale's internal consistency.

In summary, endorsement proportions for Part B of the pilot questionnaire shown in Table 4.5, Table 4.6 and Table 4.7 illustrate variations between **awareness**, **usefulness**, and **effectiveness**. Table 4.5 shows a ceiling effect on four of the five awareness approach practices. Awareness was strong with the participants and there was certainly a different understanding with usefulness (Table 4.6) and effectiveness (Table 4.7). The internal consistency reliability shown in Table 4.8 was above 0.61. Collectively, Part B showed internal reliability consistency and variation across awareness, usefulness, and effectiveness regarding a systemic school improvement approach, which confirmed retaining all question items for the main questionnaire instrument.

4.5.3 Part C: Fixed-response questions

In the pilot questionnaire, Appendix C (Part C) had seventy-seven statement items with a five-point Likert-scale response format using 'Strongly Disagree', 'Disagree', 'Agree', 'Strongly Agree', 'I cannot make a valid judgement'. While this section of the questionnaire had fixed-response questions, the refinement decision from feedback by past principal supervisors and critical experts for the main questionnaire was to have a title that reflected one of the research sub-questions. Therefore, the title was changed to 'Impact of the School Review and Improvement Framework' in the main questionnaire. The title was then supported by the lead question, 'To what extent do you agree or disagree with the following statements about the impact of the School Review and Improvement (SRI) Framework in schools?' (See Appendix C). The title immediately drew the participants' attention to the aim of this section to ensure that they were rating the question with the known purpose.

Finally, Part C reviewed the grammatical wording and meaning of each question item to ensure that each statement would be interpreted in the same way by each participant. Likewise, 'double-barrelled' and extraneous long complicated questions were avoided, as were negatively stated questions. Statements were limited to a single idea or concept relevant to the research sub-question, as part of the refinement decisions for the main

questionnaire. The review of each item resulted in only minimal changes to the wording of five statement items (Appendix C Part C Question items 30, 36, 40, 60, and 66) from the seventy-seven statements.

Table 4.9 summarises the Pilot Questionnaire statistics for Part C, question items 1–77. It also includes some descriptive statistics for the scale names in the pilot phase of this study. In generating the dataset for analysis, the rating scale '5', 'I cannot make a judgement', was withheld, so as not to influence the data analysis.

Table 4.9 Part C pilot questionnaire scale statistics (N=53)

Salient Dimension & Scale Name	N Items in Scale	Cronbach's Coefficient Alpha	Scale Mean	Scale SD	Mean Per Scale Item	Mean Correlation	Skewness	Kurtosis
1. DIRECTION & PURPOSE								
Moral Purpose, Vision, Mission (Q 1–9)	9	0.87	29.78	4.17	3.31	0.76	-0.73	1.25*
2. BUILDING CAPACITY								
Building individual capacity								
Build principal capacity (Q 10–19)	10	0.94	33.42	5.64	3.34	0.78	-1.15*	1.76*
Build teacher capacity (Q 20–26)	7	0.88	20.05	3.78	2.86	0.77	-0.19	1.01
Building Collective Capacity								
Collaborative practices (Q 27–38)	12	0.93	36.83	6.61	3.07	0.84	-0.66*	2.14
Build system capacity (Q 39–41)	3	0.81	8.85	1.89	2.95	0.52	-0.24	0.03
3. ADAPTABILITY FOR SUSTAINABILITY								
Use of data effectively (Q 42–53)	12	0.93	36.26	6.33	3.02	0.65	-0.20	1.56
Planning for improvement (Q 54–66)	13	0.90	42.84	5.69	3.30	0.73	-0.19	-0.08
Monitor for continuous improvement (Q 67–77)	11	0.91	35.22	5.33	3.20	0.70	-0.99	3.56*

*p<0.05 Bonferroni Inequality

Internal consistency reliability

An important aspect of the pilot questionnaire was the determination of internal scale consistency and reliability for Part C. Cronbach's alpha coefficient was calculated for each of the questionnaire scale names and deemed reliable when it exceeded 0.70 (Santos, 1999).

In Table 4.8, shows that all eight scale names had very sound face and content validity. As an index of internal consistency reliability, the Cronbach's coefficient alpha ranged from 0.81 for Building System Capacity to 0.91 for Building Principal Capacity. Given that this scale development was exploratory, the internal consistencies of all the scale names were acceptable in the pilot study. Therefore, the eight scale names for this pilot questionnaire instrument were deemed to be reliable and were retained in the main questionnaire.

Scale means and standard deviation

The eight scale names of Part C used a common four-point Likert scale, coded as 'Strongly Disagree' (1), 'Disagree' (2), 'Agree' (3) and 'Strongly Agree' (4). The pilot questionnaire participants were also given a fifth option of 'I cannot make a valid judgement' to nominate if they were unable to rate a question item. Only those question items that were rated by respondents were used in this analysis. Table 4.8 shows scale-name means, standard deviations, and also the scale-per-item mean. As the number of items in each scale name ranged from 3 (Building System Capacity) to 10 (Building Principal Capacity), this latter statistic provided a convenient metric for considering differences between scale-name scores. The mean per scale item statistic indicated where on the scale from 1 to 4 the mean of the scale name fell. On a four-point scale ranging from 1 to 4, zero skewness would result in a mean of 2.50 and an item mean of 3.20, which indicated that responses for that question item were skewed towards the top end of the scale. Table 4.8 shows the mean per scale items were above 3.00 for all scales except Building Teacher Capacity, which had a mean per scale item of 2.86, and Building System Capacity 2.95, which was nevertheless still towards the top end of the scale. These statistics indicated a positive discrimination by respondents towards each of the scale-name question items.

Mean correlation

Table 4.8 also reports mean correlation data for each scale name. This convenient discriminant validity index is simply the average of the Pearson correlations between a particular scale name and the remaining scales. For all scales, these mean correlation values were high, indicating significant empirical scale overlap. The highest mean correlation (0.84) was for Collaborative Practices. This scale overlap was not unexpected, given the holistic nature to the overall theoretical focus of this research. From a measurement perspective, scales should have had low inter-correlations. It was difficult to establish scales that would be mutually exclusive and yet have theoretical authenticity. Given the conceptual distinctiveness of the three salient dimensions and eight scale names derived from the literature, it was decided to retain the salient dimensions and scale names in the main questionnaire.

Skewness and kurtosis

Table 4.8 reports two other statistics that refer to the normality of the scale scores: skewness and kurtosis. While two scale names, Build Principal Capacity and Collaborative

Practices, had statistically significant skewness, four scale names— Vision, Mission and Moral Purpose; Building Principal Capacity; Collaborative Practices; and Monitor for Continuous Improvement—had statistically significant kurtosis ($p>0.05$). These departures from normality can invalidate some inferential statistical procedures and these statistics were reported for the main questionnaire data prior to conducting statistical testing.

In analysing Part C of the pilot questionnaire, it can be concluded that based on the major statistic, Cronbach's alpha coefficient, the scale names consistently measured the same dimensional construct. This was true for the eight scale names with an alpha rating greater than 0.70 and its use could be justified in the main questionnaire by virtue of its more recent appearance in the research literature. On the other measures of the questionnaire's performance—mean scale score, standard deviation, mean correlation, skewness, and kurtosis—a positive performance on each of these statistics can be seen, suggesting the scale names were providing valuable feedback on each of the salient dimensions and scale name on the systemic school improvement approach. These measures indicated a skewing towards a positive result on each of these scales. On this basis, the pilot questionnaire instrument of Part C was a reliable research instrument and has face and content validity.

4.5.4 Part D: Short-answer questions

The reviews of Part D of the pilot questionnaire led to the change of the title from 'Short Answer Questions' to 'Examples of the Role of School Review and Improvement' in the final questionnaire. This title change reflected the purpose of this section of the pilot questionnaire. The following statement, 'If you are not aware of relevant instances in any of the questions in this section, please leave the space blank', was added as an instruction for participants who genuinely were unable to give an example because they lacked information.

Each question was reviewed in this section of the questionnaire, with changes to only two statements. These changes related to examples of the role of the SRI framework, providing an explanation of 'building capacity' and 'continuous improvement' to help with the participants' interpretation.

4.6 Other Feedback

Other feedback was sought from complementary questions (C1 to C4) at the end of the pilot questionnaire (see Section 4.5.2 above). The responses to each of the questions are now considered in the sections below.

C1: Approximately what length of time did it take you to complete this pilot questionnaire?

The highest number of responses (9) to the length of time to complete the questionnaire was thirty minutes. The second highest response (5) was twenty minutes. The average length of time to complete the pilot questionnaire was twenty-six minutes. It was noted in the comments that it was an incredibly busy time of the school year when participants were invited to complete the pilot questionnaire.

In designing the questionnaire, forty minutes was allowed for participants to complete it. The feedback from the C1 question was helpful in confirming that the time to complete the questionnaire was consistently thirty minutes.

C2: Do you have any other comments you might like to make on this questionnaire?

When respondents were asked whether they had other comments about the questionnaire, the following comments were made:

> "Comprehensive."
>
> "I found it challenging in places."
>
> "The questionnaire has highlighted the need to make explicit in an ongoing way these documents which for staff are not always front of mind when working in areas we have identified."

In regard to the C2 question, the comments indicated that participants would require thinking carefully about each question but highlighted the importance of classroom teachers needing to better understand the SRI Framework. Both pieces of feedback from C1 and C2 added value to the main questionnaires face validity and reliability.

C3: Do the questions make sense?

Analysing the responses relating to whether the questions made sense, a number of concerns regarding the questions were raised. These covered points relating to 'grammar', 'spelling', 'stem statement links to the question', 'repetition of question items' and 'rewording of statements' for clarity. The pilot questionnaire was reviewed taking into

account these comments and the questions were amended where appropriate. Collectively, responses identified the importance of the questions but at the same time recognised that schools use the systematic school improvement approach differently. Perceptions like these highlight the value of such research studies especially in addressing the research question of this study: 'How does a systemic school improvement approach influence student achievement?'

C4: Are they relevant to your experience of the SRI Framework and its related practices?

The responses proposed that some of the systemic school improvement approach practice tools may need revising. A majority of the responses found the questionnaire very relevant but not directly applicable to the classroom teacher. The response to the relevance of a systemic school improvement approach to classroom teachers needed to be further explored through the semi-structured interviews with principals.

The main questionnaire instrument was revised incorporating all pilot analysis and feedback with appropriate modifications made to the main questionnaire. The final main questionnaire, which was administered, is shown in Appendix C.

4.7 Conclusion

This chapter has detailed the phases involved in the development and validation of the questionnaire on a systemic school improvement influence on student achievement using the intuitive-rational approach. The criteria adopted for the development of the questionnaire were introduced in Section 4.3, discussed, and justified as an appropriate structure for the questionnaire. The development of the questionnaire commenced with the salient dimensions and scale names shown in Table 4.2, which emerged from the literature discussion in Chapter 2.

Participants in the pilot study were an experienced and established a sample population, not only in terms of longevity within the metropolitan Catholic system, at the school and in age, but also in terms of leadership in the positions they held within their school or metropolitan Catholic school system central and regional office. It was reasonable then to conclude that the participants' perceptions of a systemic school improvement approach, which was the subject of the pilot questionnaire, was representative. The pilot questionnaire developed consisted of four parts.

- Part A – Basic Demographic Data with seven (7) items;
- Part B – Process Information with fifteen (15) items;
- Part C – Fixed Responses with seventy-seven (77) items; and
- Part D – Short-answer Questions five (5) items.

The pilot questionnaire was administered to participants in a population similar to the intended main questionnaire population. As it was essential that it be administered in one of the regions **not** involved in the main research, it was conducted across ten secondary schools in another region.

The descriptive data collected and the consistency of the reliability analysis indicated the scale names to be reliable and met the criteria for the development of the questionnaire, using the intuitive-rational approach. Data for the pilot questionnaire were analysed for content and face validity and descriptive data for reliability. The pilot data analysis and feedback from the participants informed the main questionnaire and all relevant changes were made to ensure that the main questionnaire had scale reliability.

Chapter 5 reports on the presentation of the data findings collected through the main questionnaire. The chapter is also devoted to each of the mixed-methods sequential approaches to assist with the presentation of results and interpretation of findings.

CHAPTER 5

PRESENTATION OF RESULTS OF QUANTITATIVE AND QUALITATIVE DATA ANALYSIS

5.0 Introduction

The results of the quantitative and qualitative data analysis from the questionnaire, document analysis, and semi-structured interviews are presented in this chapter. The chapter will explore the research question developed in Chapter 2 (Section 2.7):

How does a school system influence student achievement?

Or, to what extent is a school system improvement approach, developed collaboratively with the schools and introduced across a system of schools, perceived to influence student achievement?

This study's mixed-methods sequential explanatory design informed two distinct phases, which provided for subsequent phases in the procedural steps of the study. The first phase involved the collection and analysis of the quantitative data from the questionnaire. The results are presented and discussed in Section 5.1. The second phase involved the collection and analysis of qualitative data from the questionnaire, document analysis, and semi-structured interviews. The results are presented and discussed in Section 5.3.

5.1 Quantitative Data Analysis

The quantitative data came from 193 respondents to a questionnaire in twenty-two secondary schools across two of the three regions within a metropolitan Catholic school system. The questionnaire was designed to gauge the level of awareness of a systemic school improvement approach, as well as to assess the usefulness and effectiveness of the approach. Additionally, it was analysed how such an approach provided direction and purpose and built staff capacity to effect improvements continually and to adapt for sustainability. This chapter presents a descriptive statistical analysis of the data and a reliability analysis of the questionnaire.

5.2 Results of the Questionnaire Data Analysis

The data analysis was drawn from four sections of the questionnaire, discussed in Chapter 4 (Section 4.3 Pilot Questionnaire Instrument Development and Procedure):

- Part A – Demographic Data
- Part B – Systemic School Improvement Approach Information
- Part C – Fixed Response Question
- Part D – five Short-Answer Questions, used as the basis for the qualitative data analysis, which is discussed later in this chapter.

5.2.1 Overview of the quantitative statistical analysis

The descriptive statistical analysis applied to Parts A, B, and C of the questionnaire are summarised below:

i. Part A the demographic data was analysed using descriptive statistics and the findings are reported in Section 5.2.2 Response Rate to the Questionnaire.

ii. Descriptive statistics and reliability data analysis was conducted on Part B and Part C of the questionnaire data and are shown in Table 5.1 and Table 5.2. The descriptive statistics included scale mean, scale standard deviation, mean per scale item, mean correlation, skewness, and kurtosis. The internal consistency of the scales was calculated using Cronbach's coefficient alpha (Santos, 1999).

Table 5.1 Main questionnaire scale statistics – Part B (N=193)

Scale name	N items in Scale	Cronbach's alpha	Scale mean	Scale SD	Mean per Scale item	Mean correlation	Skewness	Kurtosis
Awareness	5	0.78	19.40	4.08	3.88	0.68	-1.12*	1.32*
Usefulness	5	0.74	16.97	3.39	3.39	0.72	-0.09	-0.08
Effectiveness	5	0.82	17.56	3.51	3.51	0.66	-0.70*	0.73*

*P<0.05 Bonferroni inequality

Table 5.2 Main questionnaire scale statistics – Part C (N=193)

Salient dimension	N items in scale	Cronbach's alpha	Scale mean	Scale SD	Mean per scale item	Mean correlation	Skewness	Kurtosis
1. Direction & Purpose								
2. Build Capacity	9	0.92	30.01	4.72	3.33	0.87	-0.91*	0.84*
	32	0.98	103.40	16.60	3.23	0.90	-0.78*	0.41
3. Adaptability for Sustainability	36	0.98	114.09	19.97	3.17	0.89	-0.88*	1.45*

*P<0.05 Bonferroni inequality

iii. The level of significance was set at $p<0.05$ with the Bonferroni inequality employed (Stevens, 2002).

iv. As shown in Table 5.1, Cronbach's alpha **consistency reliability** scales were all in excess of 0.70, ranging from 0.74 for 'Usefulness' to 0.82 for 'Effectiveness' with 'Awareness' being 0.78. The three scales for Awareness, Usefulness, and

Effectiveness (Table 5.1) had a coefficient greater than 0.74, reflecting good reliability. Overall, the three scales confirmed that they fell within the normal range and made a reliable contribution to internal consistency. The **means and standard deviation** showed a positive discrimination for each scale. The **mean correlation** statistic for each scale was simply the average of the Pearson correlations between a particular scale and the remaining scales. For all scales, the mean correlation values were moderate, varying from 0.66 to 0.72, indicating empirical scale overlap. This scale overlap was not unexpected, given the holistic nature to the overall theoretical emphasis of this study, as discussed in Chapter 3 (Section 3.1 Theoretical Framework).

v. Table 5.2 shows that Cronbach's alpha had a coefficient greater than 0.90 across all scales reflecting excellent **internal consistency reliability**. The coefficients ranged from 0.92 for 'Direction and Purpose' to 0.98 for both 'Building Capacity' and 'Adaptability for Sustainability'. This high correlation could be deemed 'too high', suggesting that the same question was asked repeatedly or sampled too narrowly. However, this was not the case in this study. This high correlation from 0.92 to 0.98 occurred even though the questions within each scale explored different aspects within each dimension.

Clearly in this study, a 0.98 is a high alpha and means that there is great consistency. Principals, assistant principals, coordinators, and classroom teachers have answered all question items but may have answered them differently on the Likert scale. To get high reliability, the items have to be relevant to the respondents to the questionnaire. To get 0.98, everyone who participated in the questionnaire and answered the items must have understood the items. This may be because the demographic data from the questionnaire (Part A) revealed principals, assistant principals, coordinators, and classroom teachers were well-placed, both by virtue of time spent within the school system as a whole and time within their current school, to share their perceptions of a systemic school improvement approach implemented within their schools. The questionnaire data reveal that a majority of respondents had strong awareness of the systemic-improvement approach within their schools; they gave significant endorsement to the usefulness and strong endorsement to the effectiveness. Therefore, principals, assistant principals, coordinators, and classroom teachers in Catholic schools would have a good

understanding of the systemic school improvement approach. One of the big traps for researchers is to equate high reliability with everyone answering items the same way. This is not true.

In this study the question items assessed the particular construct and provided a valid measure because the development of the questionnaire was guided by Dorman's definition of instrument development as "concerned with standards of judgement, rules or principles that can be used to guide instrument development" (Dorman, 1994, p. 115) and used the intuitive-rational approach for questionnaire and scale development discussed in Chapter 3 (Section 3.5.1 Questionnaire) (Hase & Goldberg, 1967).

The researcher's intuitive-rational approach to the development of the questionnaire relied on the instinctive identification of the salient dimensions; in this case, the salient dimensions and scale names were identified from the literature review in Chapter 2. Throughout the development and validation of the questionnaire, the researcher shared with past supervisors and co-supervisors and critical experts to establish content validity. Content validity determined the suitability and applicability of the questionnaire items to this study's purpose. The intuitive-rational approach to questionnaire development involved three steps:

a. Identify the salient dimensions.
b. Identify the items and develop scale names.
c. Pilot the questionnaire instrument through field testing.

The questionnaire was developed in five main phases, discussed in Chapter 3 and validated in Chapter 4.

The three salient dimensions had a coefficient greater than 0.70, reflecting excellent internal consistency reliability. Overall, the scale correlations confirmed that all salient dimensions had been allocated to the appropriate scale and that each questionnaire item had a reliable impact to that scale name's internal consistency. Table 5.2 indicates that the scale **mean and standard deviation** had a positive discrimination towards each of the salient dimensions. The **mean correlation** statistic for each salient dimension was moderate, varying from 0.87 to 0.90, indicating empirical scale overlap. This overlap was not unexpected, given the holistic nature of the overall theoretical emphasis of this study, which was discussed

in Chapter 3 (Section 3.1 Theoretical Framework). From a measurement perspective, however, salient dimensions should have lower inter-correlations. Given the conceptual distinctiveness of the three salient dimensions and the distinctness of each scale, high scale inter-correlation was not considered a discrepancy for this analysis and simply confirmed endorsement from multiple dimensions.

vi. Skewness measures were mainly all negative, which meant that the distribution of scores peaked to the positive end of the response scale. Table 5.1 (Part B – Awareness, Usefulness, Effectiveness) and Table 5.2 (Part C – Direction and Purpose, Capacity Building, Adaptability for Sustainability) show statistically significant skewness ($p = 0.05$), meaning a significant shift from normality.

vii. Kurtosis for a normal distribution is 3. When compared to a normal distribution, the graphs in Table 5.1 and Table 5.2 indicate tails that are shorter and thinner, and often their central peak was lower and broader. In Table 5.1 (Part B – Awareness, Usefulness, Effectiveness) and Table 5.2 (Part C – Direction and Purpose, Capacity Building, Adaptability for Sustainability), all scales had statistically significant kurtosis ($p < 0.05$), meaning a shift from normality. Therefore, the five distributions were peaked, and not flat as a normal distribution; and, as indicated in point IV above for skewness, were at the positive end of the response scale.

viii. Descriptive statistical analysis of items in Part C used a five-point scale with the following responses: *Strongly agree; Agree; Disagree; Strongly disagree;* and *I cannot make a valid judgement*. The implications of the parametric assumptions being confounded were discussed in Chapter 4 – The Development and Validation of the Questionnaire.

ix. If participants selected *I cannot make a valid judgement* in Part C, their responses were deemed as having missing values in the analysis and were not included in the descriptive data analysis. This was done to distinguish between those responding knowledgeably to the question and those that had insufficient knowledge to validly answer the question item—judged critical information in assessing the level of support for the various responses and central to ensuring reliability and validity.

x. The proportion of participants choosing the response in Part C of *I cannot make a valid judgement* varied from question to question. However, the questions participants were not able to answer mostly related to building principal capacity or

system leadership, which seemed removed from the immediate experience of these respondents. Across the seventy-seven questions in Part C, the average non-response was 3.9% (standard deviation = 2.7), indicating that approximately one in twenty-five respondents could not make a valid judgement to the questions in Part C. This suggests that the majority of respondents perceived they had sufficient knowledge to answer Part C.

5.2.2 Response rate to the questionnaire

The participants in the study consisted of individuals from a metropolitan Catholic school system of secondary schools, and regional and central offices, as discussed in Chapter 3 (Section 3.4).

The response rate to the questionnaire is shown in Table 5.3, with the overall response to the questionnaire across two regions of the metropolitan Catholic School system being 87.3%.

Table 5.3 Questionnaire response rate

Survey	Invitations Emailed out	Responses	No Responses	Response Rate
Schools	247	216	31	87.4%
Offices	20	17	3	85.0%
Overall	267	233	34	87.3%

The demographic data from Part A of the questionnaire show the age, gender, years of employment with the school system, total years of employment in current school, enrolment band of school as either small, medium or large, type of school (either single sex or coeducational) and the current position of participants. The demographic information has been collated and is shown in Appendix D.

A total of 193 participants completed the questionnaire, of which 75.6% were 41 years of age or more. Of particular relevance to this study was the number of years this 41 years-plus age group had been teaching and the insights they could provide on a systemic school improvement approach. The 41–50 years-plus age group represented 38.3% of those aged 51 years or more (32.1%); a further 24.2% of participants were 40 years of age or less, while only 3.6% of participants were between 21 and 30 years of age.

In the analysis, 59.2% of participants had sixteen years or more experience working in the school system and 82.8% of participants had been in the system both at the time of this study and during the system school improvement approach implementation (Appendix D). Further, 11.1% of respondents had come into the school system within the last six to ten years or during the time span of the study. Therefore, by virtue of their time spent within the school system, the participants represented a range of experience of the systemic school improvement approach investigated in this study. This was confirmed by the fact that 46.6% of participants had 20 years or more experience working within the metropolitan Catholic school system.

Another 33.5% of the participants had spent less than five years at their current school and hence had entered the school or central or regional office at a time within the five-year systemic school improvement approach cycle. However, 66.5% of participants had worked at the same school or office for six years or more with the systemic school improvement approach within their school or in the schools supervised by the school system personnel.

Owing to their time spent working in the school system as a whole, and within their current school in particular, all participants were positioned to share their perceptions of the systemic school improvement approach implementation within their schools. Appendix D shows that the participants' time at their current school represented a significant portion of their overall time spent within the metropolitan Catholic School system. This analysis makes two points. Participants had been in the metropolitan Catholic School system a long time so they knew the systemic school improvement approach and, second, most participants had been in the same school for one cycle of the improvement approach.

The school-based participants were in one of three secondary school categories based on school enrolment size. The school size was defined as small (1–600 student enrolments); medium (601–900 student enrolments) or large (more than 900 student enrolments) based on system enrolment bands. On this basis, 49.5% of the participants attended large secondary schools, 24.5% attended small secondary schools, and 20.8% attended medium-sized schools. Hence, this study predominantly investigated the perceptions of participants in large schools, in much the same proportion as the schools represented in this study and shown in Appendix D.

Of the participants who responded to the questionnaire, 46.6% were employed in boys-only schools, 29.5% were employed in co-educational schools, and 21.6% were employed in girls-

only schools, while 5.3% worked in a regional or central system office; these statistics were representative of the system schools.

The largest group of participants, at 54.7%, consisted of coordinators who were also classroom teachers; the second-largest group, at 11.5%, consisted of principals; and the third-largest group, at 10.4%, consisted of classroom teachers, as shown in Appendix D. The large number of coordinators in the study also included classroom teachers. Taken together, coordinators and classroom teachers represented 65.1% of participants. To a significant extent, these were the people most involved in the systemic school improvement approach, either in its planning, implementation, or monitoring. Those at the higher levels of responsibility (principals, assistant principals, and religious education coordinators) represented 28.7% of participants. If one assumes one principal, one assistant principal, and one religious education coordinator per school, this would give a total of 72 respondents across the 24 schools participating in the survey. Thus, principals, assistant principals, and religious education coordinators who responded to the questionnaire represented a response rate of 76.9% of possible respondents. Since 97.1% of principals responded to the questionnaire, the representation of principals, assistant principals, and religious education coordinators provided a representative perception of a systemic school improvement approach.

In summary, analysis of the demographic data indicated an experienced and well-established sample population with longevity within the school system and at their current school. Further, their age category and seniority within their school or regional and central office supported this contention. Therefore, the participants' perceptions of a systemic school improvement approach, which was the focus of the questionnaire, were representative.

5.2.3 Part B: Systemic school improvement information

The data presented in this section address the first question of the study, namely:

> How do principals, assistant principals, coordinators, and classroom teachers perceive the awareness, usefulness, and effectiveness of a systemic school improvement approach?

Part B of the questionnaire examined participants' perceptions of the systemic school improvement approach in relation to awareness, usefulness, and effectiveness. The five strategic practices of Part B explored participants' perceptions through endorsement proportions (Dorman, 1998) and each response is shown in Table 5.4, Table 5.5, and Table

5.6. The participants indicated their responses across the possible alternatives for the five strategic processes. Table 5.4, Table 5.5, and Table 5.6 also show an aggregated level of awareness, usefulness and effectiveness calculation to provide a better understanding of the participants' perspectives for analysis. For each of the aggregated columns, the mean and standard deviation are given.

5.2.3.1 Awareness scale

The awareness scale comprises five items, B1.1.1–B5.5.1, as shown in Table 5.4. These items asked participants to indicate to what extent school staff were **aware** of the five key systemic school improvement approach practices. In Table 5.4, an aggregated level of awareness for *Unaware* (C1+C2) and *Aware* (C4+C5) of the item has been shown.

Table 5.4 Part B questionnaire—Endorsement proportions for five awareness items (%)

Systemic School Improvement Approach Practice	C1 Nearly all are unaware …	C2 Most show little awareness but a few are aware …	C3 Mixed, some are aware and some are not aware …	C4 Most are aware, but a few are not aware …	C5 Nearly all are aware …	C1+C2 Aggregate unaware	C4+C5 Aggregate aware
B1.1.1 Strategic Improvement Plan	6.7	6.7	18.1	25.4	43.0	13.5	68.4
B2.2.1 Annual Improvement Plan	4.8	2.6	9.0	21.7	61.9	7.4	83.6
B3.3.1 Annual Evaluation of Components	3.2	7.5	19.3	20.4	49.5	10.7	69.9
B4.4.1 School's Annual Report to the Community	8.2	27.3	32.8	15.8	15.8	35.5	31.6
B5.5.1 Cyclic Review	2.8	8.3	18.8	28.7	41.4	11.1	70.1
Mean						**15.6**	**64.8**
Standard Deviation						**9.2**	**15.9**

In looking at the aggregated awareness column (C4 + C5), it can be seen that most staff indicated high levels of awareness of the strategic practices. Percentage aggregates were well above the mean of 64.8%, except for B4.4.1 at 31.6%. The strategic practice with the highest recognition was the Annual Improvement Plan (B2.2.1) at 83.6%. The practice with the next highest level of recognition was the Cyclic Review (B5.5.1) at 70.1%. In addition, the Annual Evaluation (B3.3.1 – Self Review) had 70% recognition, while the Strategic Improvement Plan (B1.1.1) had 68.4% respondent recognition. The strategic practice with the least recognition by respondents was the Annual Report to the Community (B4.4.1) – 31.6%. These findings showed strong staff awareness of the five systemic school improvement strategies (B1.1.1–B5.5.1).

5.2.3.2 Usefulness scale

The usefulness scale comprises the same five strategic practices shown in Table 5.5 (B5.5.1–B5.5.5). These processes asked participants to indicate to what extent school staff had **used** the five key systemic school improvement strategic practices. Table 5.5 shows an aggregated level of *No use* (C1+C22) and *Use* (C4+C5) for each item.

Table 5.5 Part B questionnaire—Endorsement proportions for five usefulness items (%)

Systemic School Improvement Approach Practices	C1 No use ...	C2 Little use ...	C3 Most staff have used at some time	C4 Nearly all staff have used the ...	C5 All staff have used the ...	C1+C2 Aggregate No use	C4+C5 Aggregate Use
B5.5.1 Strategic Improvement Plan	0	13.5	42.0	24.9	19.7	13.5	44.6
B5.5.2 Annual Improvement Plan	0	7.0	23.1	29.6	40.3	7.00	69.9
B5.5.3 Annual Evaluation of SRI Components	1.1	15.0	32.8	26.3	24.7	16.1	51.0
B5.5.4 School's Annual Report to the Community	7.6	60.9	20.1	8.7	2.7	68.5	11.4
B5.5.5 Cyclic Review	1.7	14.4	38.3	27.8	17.8	16.1	45.6
Mean						**24.2**	**44.5**
Standard Deviation						**22.4**	**18.9**

The strategic practice with the highest use was the Annual Improvement Plan (B5.5.2) at 69.9%. The strategic practice with the next highest level of use was the Annual Evaluation (B5.5.3) at 51.1%. The remaining three practices were used by 45.6%, or less, of staff. Similar to the awareness scale in Table 5.4, the strategic practice with the least use was the Annual Report to the Community (B5.5.4) at 11.4%. Summarising Table 5.5, the analysis finding from participants' perceptions was that staff endorsed the five systemic school improvement practices as useful.

5.2.3.3 Effectiveness scale

The effectiveness scale comprises the five strategic practices, as used in Table 5.4 and Table 5.5 and these are shown in Table 5.6. Participants were invited to indicate the extent to which they considered the **effectiveness** of the five key systemic school improvement practices.

Table 5.6 Part B main questionnaire—Endorsement proportions for five effectiveness items (%)

Systemic School Improvement Approach Practices	C1 Not Effective 1	C2 2	C3 3	C4 4	C5 Highly Effective 5	C1+C2 Aggregate Not Effective	C4+C5 Aggregate Effective
B5.6.1 Strategic Improvement Plan	1.0	7.3	29.8	54.4	7.3	8.3	61.7
B5.6.2 Annual Improvement Plan	0.5	4.8	16.6	57.2	20.9	5.3	78.1
B5.6.3 Annual Evaluation of SRI Components	1.6	9.1	26.3	53.2	9.7	10.7	62.9
B5.6.4 School's Annual Report to the Community	6.0	33.7	43.5	12.5	4.3	39.7	16.8
B5.6.5 Cyclic Review	1.7	8.8	27.1	47.5	14.9	10.5	62.4
Mean						**14.9**	**56.4**
Standard Deviation						**12.5**	**20.7**

In analysing the aggregated effectiveness column (C4+C5), the systemic school improvement practices, and four out of the five were rated above the average of 56.4%. The strategic practice with the highest rating was the Annual Improvement Plan (B5.6.2) at 78.1%. The practice with the next highest level of effectiveness was the Annual Evaluation (B5.6.3) at 62.9%., which was similar to the Cyclic Review (B5.6.5) at 62.4% and Strategic Improvement Plan (B5.6.1) at 61.8%.

Similar to the awareness and usefulness scales (Table 5.4 and Table 5.5), the strategic practice considered the least effective was the Annual Report to the Community (B5.6.4) at 16.8%.

The overall result of the endorsement analysis (Table 5.4, Table 5.5, and Table 5.6) and the five strategic processes exhibited reasonably wide endorsements by the participants. A ceiling effect was evident on four of the five practice items—namely, Strategic Improvement Plan, Annual Improvement Plan, Annual Evaluations, and Cyclic Review—which reflects an aggregated mean awareness of 64.8% and there is a different interpretation emerging with usefulness at 44.5% and effectiveness at 56.4%.

Collectively, Part B of the questionnaire on awareness, usefulness, and effectiveness of the systemic school improvement approach showed good endorsement and agreement.

5.2.4 Part C: Impact of the systemic school improvement approach

The data results presented in this section address the second question in the research design namely:

> How do principals, assistant principals, coordinators, and classroom teachers perceive the systemic school improvement approach providing direction and

purpose, building capacity, and adapting for sustainable improvement?

In Part C of the questionnaire participants were invited to specify their agreement or disagreement using a five-point Likert scale on seventy-seven items and to indicate if they had insufficient knowledge to answer the question. Appendices E to L indicate those *Agreeing* or *Strongly agreeing* with the question item and these two responses were aggregated by the researcher to provide a total positive response. The researcher did a similar aggregation for those *Disagreeing* or *Strongly disagreeing* with the question item. For each of the aggregated columns, shown as *Aggregate agree* and *Aggregate disagree*, the mean aggregated agreement and disagreement were calculated. The following sections provide analysis of the data from Part C and the results of the questionnaire.

In Part C of the questionnaire the consistency reliability shown in Table 5.2 indicated high alphas for all question items on direction and purpose, building capacity, and adaptability for sustainability and that they were all highly correlated. The questionnaire items in Part C illustrate that the respondents answered all the question items, although they may have answered them differently on the Likert scale. Therefore, the researcher selected one item from each table of data analysis in Appendices E to L because they closely reflected the salient dimension. This does not mean that the items selected by the researcher are any stronger than any other question items, because they all had high alphas.

5.2.4.1 Direction and purpose salient dimension

The Direction and Purpose salient dimension analysis is shown in Appendix E. The appendix shows nine statement items asking respondents to indicate from their own experience the extent to which the systemic school improvement approach provided direction and purpose to school improvement. The Direction and Purpose statement items had an excellent reliability alpha of 9.2. Table 5.7 shows one selected item that best describes the salient dimension for Direction and Purpose.

Table 5.7 Selected item from Part C of the questionnaire

SALIENT DIMENSION: DIRECTION AND PURPOSE ITEMS 1 – 9		N	STRONGLY DISAGREE %	DISAGREE %	AGREE %	STRONGLY AGREE %	AGGREGATE DISAGREE %	AGGREGATE AGREE %	I CANNOT MAKE A VALID JUDGEMENT %
C 1.	GIVES OUR SCHOOL DIRECTION TOWARDS IMPROVING STUDENT ACHIEVEMENT	183	0	6.6	40.4	52.5	6.6	92.9	0.5

The results (as shown in Appendix E) from the perceptions of the participants suggested that a systemic school improvement approach gave direction and purpose with students at the centre and a focus on student achievement in aiming to meet the school's moral purpose. The results indicated that vision and mission gave direction and purpose to schools in living out their dual moral purpose of evangelisation and learning. The analysis indicated slightly less success between the classroom/school vision and the system vision, and a lack of emphasis on narrowing the gap in student learning.

5.2.4.2 Build capacity salient dimension

The first section of the Build Capacity salient dimension focuses on building the individual capacity of the principal, followed by building teacher capacity. The Building Capacity salient dimension statement items had an excellent reliability alpha of 9.8.

Building principal capacity data are shown Appendix F. The ten statement items ask participants on the *Agree* to *Disagree* Likert scale to indicate to what extent a systemic school improvement approach helped build principal capacity. Table 5.8 shows one selected item that best describes the salient dimension for building principal capacity.

Table 5.8 Part C—Building principal capacity

Dimension 2: Building Capacity – Building Principal Capacity Items 10 to 19		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 10.	Allows principals to sustain student learning and achievement	183	1.1	9.8	46.4	37.2	10.9	83.6	5.5

The results (as shown in Appendix F) indicated that a systemic school improvement approach was perceived to build principal capacity as a strategic leader who plans, sets goals, and determines resource allocation for continuous improvement with a focus on innovation. The notion of school leadership appeared more transactional than transformational, in particular to pedagogy and students and their learning. School leadership is explored more fully via the document analysis and semi-structured interviews with six principals.

Building teacher capacity is the second scale of building individual capacity. The results for building teacher capacity are shown in Appendix G. These statement items asked participants to indicate to what extent they perceived a systemic school improvement

approach helped build teacher capacity. Table 5.9 shows one selected item that best describes the salient dimension for building teacher capacity.

Table 5.9 Part C—Building teacher capacity

Dimension 2: Building Capacity – Building Teacher Capacity Items 20 to 26		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 22.	Promotes effective teaching	179	2.2	14.0	58.7	21.8	16.2	80.5	3.4

The results (as shown in Appendix G) established a strong overall agreement that teachers build their capacity by concentrating on effective teaching and student learning and working collaboratively with each other. The questionnaire items indicated that teachers collaborated frequently to critically reflect on their teaching practices in order to ensure that students engaged in deep learning.

Analysis of the disagreements indicated that a systemic school should encourage classroom teachers to be more creative and innovative and to be able to research their own practice. There was little evidence from the questionnaire of structures and/or opportunities for classroom teachers to reflect on, discuss, and challenge their teaching practices to ensure students engaged in deep learning.

The second scale of the Building Capacity salient dimension was building collective capacity, starting with **collaborative practices** and then **system leadership**.

Participants' perceptions about Building Collective Capacity through collaborative practices are shown in Appendix H. These twelve items invited participants to indicate the extent to which a systemic school improvement approach helped build collective capacity. Table 5.10 shows one selected item that best describes the salient dimension for collaborative practices.

Table 5.10 Part C—Collaborative practices

Dimension 2: Building Capacity – Collaborative Practices Items 27 to 38		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 31.	Builds trusting relationships within the school	180	2.8	25.6	48.3	16.7	28.4	65.0	6.7

In summary, two distinctive but complementary perceptions emerged in the results. The first was required to create the second. The first perception entailed a vision of a learning

organisation with the aim of collaboration, addressing educational change, building a culture of evidence-informed continuous improvement and a requirement for new thinking to improve student achievement. Schools have effective practices to engage in meaningful and collaborative planning that leads to improvement in teaching and learning.

To enable this to be achieved, according to the second perception there was a need to develop trusting relationships within the school. These relationships would create opportunities for collaboration through learning teams and networking within the school and beyond, which would allow teachers to learn from each other.

The results (as show in Appendix H) demonstrated that a vision of a school as a learning organisation was beginning to emerge; however, it had not yet developed into a culture with the collaborative practices that underpinned such a learning organisation.

System leadership capacity is the second scale of the building collective capacity; the respondents' perceptions are shown in Appendix I. The three items of this scale invited participants to indicate the extent to which a systemic school improvement approach helped build system leadership capacity. Table 5.11 shows one selected item that best describes the salient dimension for system leadership.

Table 5.11 Part C—System leadership

Dimension 2: Building Capacity – System Leadership Items 39 to 41		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 40.	Brings about system-wide improvement in student achievement	179	2.8	14.5	46.4	26.8	17.3	73.2	9.5

This question item attempted to identify if there was an understanding by classroom teachers and school leaders of the concept of system leadership. The average response for *I cannot make a valid judgement* was 6.3% for this statement item, which supported the notion that system leadership is not clearly understood in schools. Item C40, with a result of 9.5%, indicated participants could not judge whether system-wide improvement brought student achievement.

5.2.4.3 Adaptability for sustainability salient dimension

The Adaptability for Sustainability salient dimension consisted of three scales—use of data, planning for improvement, and monitoring for continuous improvement. The adaptability

for sustainability salient dimension statement items had an excellent reliability alpha of 9.8. This section discusses these three scales, commencing with 'use of data'.

The results for the **use of effective data** is shown in Appendix J. These twelve statement items invited respondents to assess the effective use of data within the school as evidence of adaptability for sustainability. Table 5.12 shows one selected item that best describes the salient dimension for use of effective data.

Table 5.12 Part C—Use of effective data

Dimension 3: Adaptability for Sustainability – Use of Effective Data Items 42 to 53		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 43.	Encourages a range of sources to generate data	178	1.1	14.6	53.4	25.3	15.7	78.7	5.6

The results indicated strong agreement on the effective use of data that overall support and challenge school improvement for informing student achievement. The use of data was well embedded in the schools to consistently inform teaching practice and student achievement. The shortcoming in the effective use of data in a systemic school improvement approach was the need for data to be available for analysis when comparing like schools and monitoring student achievement. In addition, the use of data was helpful in gaining an understanding of teacher pedagogy, students, and their learning and did not just focus solely on student achievement.

Planning for improvement is the second scale of the Adaptability for Sustainability scale, which is shown in Appendix K. These thirteen statement items invited respondents to assess the planning for improvement within the school as evidence of adaptability for sustainability. Table 5.13 shows one selected item that best describes the salient dimension for planning for improvement.

Table 5.13 Part C—Planning for improvement

Dimension 3: Adaptability for Sustainability – Planning for Improvement Items 54 to 66		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 57.	Provides our school with a framework for future planning	174	1.7	4.0	48.9	44.3	5.7	93.2	1.1

The results (as shown in Appendix K) indicated that a systemic school improvement approach provided a framework for future planning, a model for strategic planning, and a map for school improvement. Further, additional results showed that an improvement approach allowed for a practice of planning for school improvement and for educational and structural change. There was a reasonable level of agreement that planning also provided opportunities for targeted initiatives and professional reflection.

Monitoring for continuous improvement was the final scale for Adaptability for Sustainability, shown in Appendix L. These statement items asked respondents to assess monitoring as evidence of adaptability for sustainability. Table 5.14 shows one selected item that best describes the salient dimension for continuous improvement.

Table 5.14 Part C—Monitoring for continuous improvement

Dimension 3: Adaptability for Sustainability – Monitor for continuous improvement Items 67 to 77		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 67.	Provides a set of processes for our school to monitor school improvement	173	0.6	5.2	56.1	37.0	5.8	93.1	1.2

The results (as shown in Appendix L) indicated the three highest items allowed schools to pinpoint areas of improvement and provided a set of processes to monitor improvement, and that a systemic school improvement approach was a tool for school accountability for student achievement. The high level of agreement for these items suggested these three practices—identifying areas of improvement, monitoring improvement, and accountability for student achievements—were a priority within the schools. Three items having 80% in the aggregated agreement supports the notion of monitoring for continuous improvement by internal and external reviews, which were complementary to each other. The remaining question items with positive agreement related to alignment and coherence as being important in monitoring school improvement, which provided sustainability into the future.

In summary, the presentation of the quantitative data analysis, i.e. the researcher's investigation of participants' perceptions, was reflected in the detailed analysis of the results of a questionnaire undertaken by principals, assistant principals, coordinators, and classroom teachers in twenty-two secondary schools in a Catholic metropolitan school system. The demographic data of the questionnaire (Part A) revealed participants were well

placed by virtue of time spent within the school system as a whole and within their current school to share their perceptions of a systemic school improvement approach implemented within their schools. Part B of the survey data revealed a majority of respondents indicated strong awareness of the improvement approach within their schools. Respondents gave significant endorsement to the usefulness of two of five approach practices—Annual Improvement Plan and Annual Evaluation of SRI Components. They also gave strong endorsement to the effectiveness of four out of five approach practices—Strategic Improvement Plan, Annual Improvement Plan, Annual Evaluation, and Cyclic Review.

In the analysis of the dataset, Part C results showed how a systemic school improvement approach gave schools direction and purpose, with an average 88.4% of respondents (Appendix E) agreeing this to be the case. Moreover, an improvement approach was perceived to help build the capacity within schools towards student achievement in two ways. First, in building principal capacity—endorsed on average by 87.4% of respondents (Appendix F) —and second, in building teacher capacity—endorsed on average by 75.9% of respondents (Appendix G).

Associated with building principal and teacher capacity was the development of four key capabilities within staff, shown in the following list:

i. Enabling collaborative practices among staff — endorsed on average by 76.8% of respondents (Appendix H);
ii. Concentrating on effective use of data — endorsed on average by 77.1% of respondents (Appendix J);
iii. Ongoing and sustainable planning for improvement — endorsed by 84.3% of respondents (Appendix K); and finally
iv. Monitoring for continuous improvement — endorsed by 86.5% of respondents (Appendix L).

A related question explored within the data analysis was how a systemic school improvement approach assisted in building system leadership. A majority of respondents (73.3%, Appendix I) believed an improvement approach helped to achieve this.

5.3 Qualitative Data Analysis

This study's mixed-methods sequential explanatory design informed two distinct phases, which provided for subsequent phases in the procedural steps of the study. The first phase

has been previously discussed in the quantitative data analysis section. In the second phase the researcher analysed qualitative data from the questionnaire, document analysis, and semi-structured interviews, which informed the quantitative results. The results of the qualitative data analysis are discussed below.

The qualitative data analysis adopted a thematic analysis methodology, as discussed in Chapter 3 (Section 3.6.2 Qualitative analysis of data), which allowed the researcher to account for the participants' experience. To generate the results tables in this section of the chapter, six common steps were utilised. These six steps were familiarisation with the data, generating initial codes, searching for themes, reviewing the themes, defining and naming the themes, and producing a chapter analysis of the data results. The most commonly used words formed an emerging theme and their frequency of mention is shown in five tables from Table 5.16 to Table 5.20.

5.3.1 Results of Part D of the Questionnaire

The concluding part of the questionnaire, Part D, consisted of five short-answer questions asking participants to share an example of the role that the systemic school improvement approach played in giving direction and purpose, building capacity, building capacity of teams and faculties, adapting to educational change, and sustaining continuous improvement. Participants were asked to give a short response to each of the five questions (D1–D5) shown in Table 5.15. The researcher applied no restrictions on the length of answers and allowed respondents the greatest opportunity to share an example and to write their response in the manner and length convenient to them. The response rates to the short answers are presented in Table 5.15.

Table 5.15 Response rates for short-answer questions (N=193)

Question Number	Question	No Response	Responses	Percentage Response
D1	Please share an example of the way the SRI Framework has influenced your school's sense of direction and purpose.	86	107	55.5
D2	Please share an example of the way the SRI Framework has influenced the capacity building of people in your school.	95	98	50.8
D3	Please share an example of the way the SRI Framework has influenced the building of capacity of teams and faculties in your school.	96	97	50.3
D4	Please share an example of the way the SRI Framework has helped your school adapt to educational change.	97	96	49.7
D5	Please share an example of the way the SRI Framework has sustained continuous improvement in your school.	90	103	53.4
	Mean			51.9
	Standard Deviation			2.2

The first salient dimension emerging from the literature review in Chapter 2 that influenced student achievement was **Direction and Purpose**. The response rate on D1 (direction and purpose) was 55.5%, as shown in Table 5.15. This ranked first from the five questions in Part D of the questionnaire. The presentation of results was on the following statement:

> Please share an example of the way the SRI Framework has influenced your school's sense of direction and purpose.

The analysis of the respondents' examples (Appendix M) is summarised in Table 5.16.

Table 5.16 Part D1—Direction and Purpose (N=107)

EMERGING THEMES	RANK ORDER	FREQUENCY %
PLANNING	1	16.9
GOALS	2	13.0
COLLABORATION	3	10.3
STUDENTS' DIVERSE NEEDS	4	9.5
TEACHING & LEARNING FOCUS	5	8.4
INTERNAL REFLECTION ON PRACTICE	6	6.5
EXTERNAL REVIEW	7	6.5
VISION/MISSION	8	4.7
PERSONAL, PERFORMANCE & PLANNING REVIEW (PPPR)	9	4.7
DATA-DRIVEN DECISION-MAKING	10	2.8
IMPROVEMENT	11	2.8
SCHOOL LEADERSHIP	12	1.8
OTHER INDIVIDUAL EXAMPLE(S)	13	9.3
IT HASN'T EXAMPLE(S)	14	2.8
MEAN		**7.12**
STANDARD DEVIATION		**4.22**

The respondents mentioned the theme **Planning** (at 16.9%) as most important—two standard deviations above the mean for Direction and Purpose in a systemic school improvement approach. Respondents cited examples (Appendix E) of planning, which focused on strategic and annual planning. Related to the theme of planning, **Goals** (at 13.0%) was ranked second in importance. It focused on setting expectations for staff to improve school performance. The examples advocated a systemic school improvement approach that provided schools with opportunities to develop goals and connections to strategies within strategic and annual improvement planning. The focus on goals positioned the whole school

for long-term success by addressing system-driven priorities and school-driven agendas, together with state and national government educational agendas. Realistic goals acknowledged the idea of a restricted number of challenging, attainable, and sustainable goals that were well-designed, openly communicated, and aligned to an operation plan.

The third most important theme mentioned was **Collaboration** (at 10.30%). Respondents cited examples (Appendix E) of a systemic school improvement approach as providing teachers with the opportunity to converse, collaborate, critically reflect, evaluate, and plan within and across key learning area (KLA) faculties in secondary schools. Well-established school practices appeared to enable teachers to engage in meaningful and collaborative planning with an individual and collective commitment to professional learning. The opportunity for collaboration and reflection was mentioned regularly as a sign of a learning culture of mutual respect and collaborative professional relational trust among staff.

The notion of a systemic school improvement approach providing whole-school direction and purpose was also evident in examples (Appendix M) focusing on meeting **Students' Diverse Needs** (9.5%) and acknowledging the special needs of gifted students. Examples implied that a systemic approach provided strategies to accommodate the special needs of diverse learners, where school cohesive practices occur to identify and respond to student diversity by making the learning experience relevant, purposeful, and engaging. This would require school practices to be extremely innovative and flexible, with a strong emphasis on valuing the diversity of learners. Closely associated with students' diverse learning needs was **Teaching and Learning** (at 8.40%), with a particular emphasis on students' learning in literacy and numeracy and the development of pedagogical practices in a technology environment.

Themes of lowest importance emerging from the analysis for direction and purpose (as shown in Table 5.16) were **Internal Reflection on Practice** at 6.5%, **External Review** at 6.5%, **Vision and Mission** at 4.7%, **Personal Performance and Panning Review** at 4.7%, **Data-driven Decision-making** at 2.8%, **School Leadership** at 1.8% and other single categories totalling 9.3%. A percentage of respondents (2.8%) indicated a systemic school improvement approach had not made a difference to purpose or direction.

Building Capacity was the second salient dimension emerging from the literature discussed in Chapter 2 that influenced student achievement. The open-ended question on Capacity Building (D2) provided examples (Appendix N) that concentrated on building the individual

capacity of teachers. The response rate to question D2 was 50.8%, as shown in Table 5.15. The presentation of results was based on the following statement:

> Please share an example of the way the SRI Framework has influenced the capacity building of people in your school.

The analysis of the respondents' examples (Appendix N) on schools adapting to educational change is summarised in Table 5.17.

Table 5.17 Part D2—Building Capacity (N=98)

EMERGING THEMES	RANK ORDER	FREQUENCY %
PROFESSIONAL LEARNING	1	18.4
BUILDING TEACHER CAPACITY	2	14.3
COLLABORATION	3	11.2
SCHOOL LEADERSHIP	4	11.2
TEACHING & LEARNING	5	9.1
PERSONAL, PERFORMANCE & PLANNING REVIEW (PPPR)	6	7.1
DATA-DRIVEN DECISION-MAKING	7	5.1
EMPOWERMENT	8	4.0
MENTORING	9	3.1
CULTURE	10	3.1
OTHER INDIVIDUAL EXAMPLE(S)	11	9.4
IT HASN'T EXAMPLE(S)	12	4.0
MEAN		**7.5**
STANDARD DEVIATION		**4.9**

The most significant emerging theme mentioned was **Professional Learning** at a frequency of 18.4%—two standard deviations above the mean of 7.5. The basic premise from the statements was that a teacher's workplace is their principal professional learning place and growth occurs in the context of engaging in improving teacher practice. Examples of this are in Appendix N — professional learning through experiences in the scope of their work, solving problems, and engaging in new school experiences. Related to the notion of professional learning is the concept of **Building Teacher Capacity** (at 14.3%) as the next most significant theme, which focused on explicit teaching practice.

The third most significant theme was **Collaboration** at 11.2%. Respondents cited examples (Appendix N) of a systemic school improvement approach providing opportunities for staff to plan together and share different ideas for common practices across the school. **School**

Leadership (at 11.2%) was the third most significant theme. The notion of school leadership emerged from the examples as being distributive and sharing key school improvement responsibilities with the leadership team and middle leaders in the school. **Teaching and Learning** (at 9.1%) emerged as the fourth significant theme, examples focusing on student-differentiated learning in addressing gifted education, literacy, and numeracy. Student-differentiated learning related to explicit teaching practice to improve student achievement.

The least significant themes to emerge from the analysis (as shown in Table 5.17) for building capacity were **Personal Performance and Planning Review** at 7.1%, **Data-driven decision-making** at 5.1%, Empowerment at 4.0%, **Mentoring** at 3.1%, **Culture** at 3.1% and other single item themes totalling 9.4%. A small percentage of respondents (4%) indicated that a systemic school improvement approach had not made a difference to Building Capacity.

The open-ended question on Capacity Building in Teams and Faculties (D3) had a response rate of 50.3%, as shown in Table 5.15. The question on Building Capacity (D3) provided examples (Appendix O) that concentrated on building collective capacity of school leaders and classroom teachers in teams and faculties. The presentation of results was on the following statement:

> Please share an example of the way the SRI Framework has influenced the capacity building of teams and faculties in your school.

The analysis of the respondents' examples (Appendix O) on schools adapting to educational change is summarised in Table 5.18.

Table 5.18 Part D3—Capacity Building in Teams and Faculties (N=97)

Emerging Themes	Rank Order	Frequency %
Collaboration	1	17.5
Teaching & Learning Focus	2	15.5
Professional Learning	3	11.4
Leadership	4	10.3
Planning Together	5	10.3
Goals	6	7.2
Building Middle Leaders' Capacity	7	6.2
External Review	8	3.0
Data-driven Decision-making	9	3.0
Internal Reflection on practice	10	2.0
Other Individual Example(s)	11	4.4
It hasn't Example(s)	12	7.2

MEAN	**8.25**
STANDARD DEVIATION	**4.96**

The most important theme mentioned by respondents as affecting Capacity Building in Teams and Faculties was **Collaboration** at 17.5%. This notion of working together continued to surface in this study, implying teams and faculties created relationships that secured enquiry-focused conversation, which respected professional knowledge and teaching practice. The second most important theme was **Teaching and Learning** at 15.5%. The examples (Appendix O) focus on the role of KLAs in building literacy skills and sharing best practice and cross-curricular assessments.

The third most important theme was **Professional Learning** at 11.4%. Respondents mentioned examples (Appendix O) of the systemic school improvement approach as providing opportunities to ensure continuous improvement with teams taking on responsibilities for specific strategies. **Planning** at 10.3% was also emphasised as the fourth most important theme. The notion of KLAs developing faculty strategic plans and opportunities for collaborative planning was emphasised in the examples cited.

The emerging themes of least importance from the analysis shown in Table 5.18 for Capacity Building in Teams and Faculties were **Goals** at 7.2%, **Building Middle Leaders' Capacity** at 6.2%, **External Review** at 3.0%, **Data-driven Decision-making** at 3.0%, **Internal Reflection on Practice** at 2.0% and other single item themes totalling 4.0%. A percentage of respondents (7.2%) indicated that a systemic school improvement approach had not made a difference to capacity building in team and faculties.

Adaptability for Sustainability was the third salient dimension emerging from the literature discussed in Chapter 2 that influenced student achievement. This open-ended question concentrated on adapting to educational change (D4). The question attracted a response rate of 49.7%, as shown in Table 5.15. The presentation of results was on the following statement:

> Please share an example of the way the SRI Framework has helped your school adapt to educational change.

The analysis of the respondents' examples (Appendix P) on schools adapting to educational change is summarised in Table 5.19.

Table 5.19 Part D4—Adapting to Educational Change (N=96)

EMERGING THEME	RANK ORDER	FREQUENCY %
TEACHING & LEARNING	1	25.0
INNOVATION THROUGH TECHNOLOGY	2	21.8
DATA-DRIVEN DECISION-MAKING	3	7.3
PLANNING	4	7.3
INTERNAL REFLECTION ON PRACTICE	5	5.2
ALIGNMENT	6	4.1
CULTURE	7	3.1
COLLABORATION	8	3.1
EXTERNAL REVIEW	9	3.1
RESEARCH	10	2.0
CAN'T GIVE AN EXAMPLE	11	5.6
OTHER INDIVIDUAL EXAMPLE(S)	12	6.2
IT HASN'T EXAMPLE(S)	13	6.2
MEAN		**7.4**
STANDARD DEVIATION		**6.7**

The most significant theme mentioned was **Teaching and Learning** at 25.0%. This theme continued to surface in this study as being most important. The examples (Appendix P) cited *diverse learning*, *differentiated learning*, *assessment*, and *literacy and numeracy* as teaching and learning areas that were key priorities in planning. The second significant theme mentioned was **Innovation through Technology** at 21.8%. The examples cite the integration of technology into teaching and learning through *e-learning*, *student-centred learning*, and *pedagogical practice*. Any result mentioned in Table 5.19 of less than 7.3% was considered to be of least significance. These included **Data-driven decision-making** (7.3%), **Planning** (7.3%), **Internal Reflection on Practice** (5.2%), **Strategic Alignment** (4.1%), **Culture** (3.1%), **Collaboration** (3.1%), **External Review** (3.1%), **Research** (2.0%) and other single-item themes totalling 6.2%. A small percentage of respondents (6.2%) indicated the systemic school improvement strategies had not made a difference to **adapting to educational change**.

The final open-ended question of Part D of the questionnaire was again on adaptability for sustainability (D5). This question recorded a response rate of 53.4%, as shown in Table 5.15. It concentrated on examples related to sustained continuous improvement. The presentation of results was on the following statement:

> Please share an example of the way the SRI Framework has sustained continuous improvement in your school.

The analysis of the respondents' examples (Appendix Q) on sustained continuous improvement is summarised in Table 5.20.

Table 5.20 Part D5—Sustained Continuous Improvement (N=103)

EMERGING THEMES	RANK ORDER	FREQUENCY %
DATA-DRIVEN DECISION-MAKING	1	17.5
INTERNAL REFLECTION ON PRACTICE	2	15.5
TEACHING & LEARNING	3	14.6
LEARNING CULTURE	4	9.7
PLANNING	5	7.8
GOALS	6	3.9
BUILD STAFF CAPACITY	7	3.9
OTHER INDIVIDUAL EXAMPLE(S)	8	23.2
IT HASN'T EXAMPLE(S)	9	3.9
MEAN **STANDARD DEVIATION**		**11.4** **6.8**

The theme mentioned most important for Sustained Continuous Improvement (as shown in Table 5.20) was **Data-driven Decision-making** at 17.5%. It is far more common in schools today to use data as evidence of effectiveness at the beginning of any school improvement planning. The view is that this allows schools to learn what works or what does not. In planning for sustained continuous improvement, the notions of transparency, alignment, and the coherence between what happens individually and collectively emerged from the respondents' examples (Appendix Q). The second most important theme was **Internal Reflection on Practice** at 15.5%. The idea was that schools were self-reviewing and self-improving in monitoring and evaluating the effectiveness of schools' improvement journey. Internal review and reflection was characterised by making evidence-based decisions to reach an assessment of effectiveness and identifying additional improvement in the light of their evaluation.

The third most important theme mentioned was **Teaching and Learning** at 14.6%. Respondents cited examples (Appendix Q) of a systemic school improvement approach providing opportunities to deliver strategic programs in literacy and numeracy driven by English-as-a-second-language pedagogy and accelerated programs for gifted students. The view of a differentiated delivery of the curriculum could be strategically planned.

The final emerging themes of least importance from the analysis shown in Table 5.20 for Sustained Continuous Improvement were **Learning Culture** at 9.7%, **Planning** at 7.8%, **Goals** at 3.9%, **Building Staff Capacity** at 3.9%, and other single-item themes totalling 23.2%. A small percentage of respondents (3.9%) indicated a systemic school improvement approach had not made a difference to sustained continuous improvement.

The open-ended question on sustained continuous improvement provided a number of consistent examples of the ongoing efforts of schools to improve and sustain student achievement. The responses emphasised the strong notion of improvement as the 'watermark' in the development of a learning culture for student achievement. The learning culture emerging from the examples was of a reflective practice in schools for self-reviewing, evaluation, evidence, and feedback. This learning culture was aided by the effective use of data to inform teaching practice and of programs to improve student achievement.

Table 5.21 indicates the aggregated summary of the percentage themes from questions D1 to D5 to give an understanding of participants' overall perspectives. For each of the aggregated columns, the total percentage for each theme has also been calculated from the emerging themes in Table 5.16, Table 5.17, Table 5.18, Table 5.19, Table 5.20.

Table 5.21 Part D—Aggregate summary of themes (N=353)

Themes		D1 N=107	D2 N=98	D3 N=97	D4 N=96	D5 N=103	TOTAL N	Rank Order
Teaching & Learning	(%)	8.4	9.1	15.5	25.0	14.6	**72***	**1**
	(N)	9	9	15	24	15		
Planning	(%)	16.9	0	10.3	7.3	7.8	**43**	**2**
	(N)	18	0	10	7	15		
Collaboration	(%)	10.3	11.2	17.5	3.1	0	**42**	**3**
	(N)	11	11	17	3	0		
Data-driven Decision-making	(%)	0	5.1	3.0	7.3	17.5	**33**	**4**
	(N)	0	5	3	7	18		
Professional Learning	(%)	0	18.4	11.4	0	0	**30**	**5**
	(N)	0	19	11	0	0		
Internal reflection on Practice	(%)	6.5	0	2.0	5.2	15.5	**30**	**6**
	(N)	7	0	2	5	16		
Goals	(%)	13.0	0	7.2	0	3.9	**25**	**7**
	(N)	14	0	7	0	4		
Distributive Leadership	(%)	0	11.2	12.3	0	0	**23**	**8**
	(N)	0	11	12	0	0		
Innovation & Technology	(%)	0	0	0	21.8	0	**21**	**9**
	(N)	0	0	0	21	0		
Learning Culture	(%)	0	3.1	0	3.1	9.7	**16**	**10**
	(N)	0	3	0	3	10		
External Review	(%)	6.5	0	3.0	3.1	0	**13**	**11**
	(N)	7	0	0	0	0		
Middle Leaders' Capacity	(%)	0	0	6.2	0	0	**6**	**12**
	(N)	0	0	6	0	0		
Total D1–D5	**(%)**	**61.6**	**58.1**	**88.4**	**75.9**	**69.0**	-	-
MEAN							**29.4**	
STANDARD DEVIATION							**16.6**	

Note: * Item 1.96 standard deviations above the mean.

Shown in Table 5.21 are six themes identified by participants as most significant from 1 (Teaching and Learning) to 6 (Internal Reflection on Practice) in their level of importance. Those ranked from 7 (Goals) to 12 (Middle Leaders' Capacity) were themes considered of less importance. This conveyed that respondents clearly differentiated the purpose of a systemic school improvement approach. The most significant theme across all open-ended questions, D1 to D5 shown in Table 5.17, Table 5.18, Table 5.19 and Table 5.20, was **Teaching and Learning** (n=72), which was 1.96 standard deviations above the mean. The least significant was **Middle Leaders' Capacity** (n=6).

The final part of the questionnaire (Part D) asked respondents to provide short written answers with examples of five areas. The five areas were Direction and Purpose, Capacity Building, Capacity Building in Teams and Faculties, Adapting to Educational Change, and Sustained Continuous Improvement. These responses were analysed individually in Table 5.16–Table 5.20 and then collectively in Table 5.21. Of the twelve themes to emerge from the collective responses, the most significant statistically was a stronger focus on teaching

and learning. Teaching and Learning (72.6%) was the strongest emerging theme, well above the average of 29.4 (with standard deviation of 16.9) for the other eleven themes. The next four emerging themes were Planning (42.3%), Collaboration (42.1%), Data-driven Decision-making (32.9%), and Professional learning (29.8%).

The questionnaire results and examples identified a systemic school improvement approach as having a perceived influential impact on student achievement, centred on student learning by the classroom teacher, the school leadership and, finally, by a systemic aspiration for continuous improvement. The results also suggested that a systemic school improvement approach worked by providing direction and purpose, building the capacity of classroom teachers and school leaders, and by allowing for adaptability and sustainability.

5.3.2 Document analysis

Document analysis was adopted in this study as part of the mixed-methods approach to collect data from six of the nineteen eligible participating schools. This section presents an analysis of school improvement documents in order to elaborate, improve, and clarify results from one method by comparing them with the results from another method as a means of triangulating the data. The complementary data allowed the qualitative results from the document analysis to enhance understanding of the quantitative and qualitative results from the questionnaire discussed in earlier sections of this chapter.

The same thematic analysis steps were adopted by the researcher as for the open-ended questionnaire statements analysis. This included familiarisation with the data, generating initial codes, searching for themes, reviewing the themes, and defining and naming the themes. The most commonly used words formed an emerging theme and their frequency of mention is shown in this section of the chapter.

The criteria for selecting the six secondary schools—three HLG and three LLG schools—were discussed in Chapter 3. The documents for analysis were identified from the endorsement proportions and statistical analysis of Part B of the questionnaire (i.e. 'Systemic School Improvement Approach Information') on the three scale items: Awareness, Usefulness, and Effectiveness. Endorsement proportions are simply the percentages of the population sample choosing each response (Dorman, 1998). The systemic school improvement documents identified for analysis were the school's Strategic Improvement Plan (SIP), the

Annual Improvement Plan (AIP), the Annual Evaluation (AE), and Cyclic Review Reports (CR). Samples of all documents were collected from each of the HLG and LLG schools.

An overview of the documents analysed is shown in Table 5.22 and includes the HLG and LLG schools (coded as R1G1HLG, R1B1HLG, R2C1HLG, R1G2LLG, R1B2LLG, and R2C2LLG), along with the names of documents and the associated years. In the initial five-year cycle of the systemic school improvement approach, each of the six schools also participated in an external review (Cyclic Review), with a report validating their self-review statement on 'Looking Back' and recommendations for 'Looking Forward'. These school improvement documents and their purpose were discussed in Chapter 1 (Section 1.2.3: The local context).

Table 5.22 Systemic school improvement approach document analysis: overview

School Code	School Group	Student Learning Gain	Strategic Improvement Plan	Annual Improvement Plan	Annual Evaluations	Cyclic Review Report
R1G1	Girls	High (HLG)	2011–2015	2010, 2011,2012	2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013	2009
R1B1	Boys	High (HLG)	2008–2012	2011, 2012	2011, 2012	2012
R2C1	Co-education	High (HLG)	2008–2012	2008, 2010, 2011, 2012	2007, 2008, 2009, 2010, 2011, 2012, 2013	2009
R1G2	Girls	Low (LLG)	2011–2013	2010, 2011, 2012	2011, 2012, 2013	2009
R1B2	Boys	Low (LLG)	2009–2011, 2012–2013	2011, 2012	2011, 2012, 2013	2011
R2C2	Co-education	Low (LLG)	2011–2013	2008, 2009, 2010, 2011, 2012,	2008, 2009, 2010, 2011, 2012	2008, 2013

5.3.2.1 Sample documents

The sample of documents made available by schools is shown in Table 5.22. Only 75 per cent of the documents were available for analysis, as shown in Table 5.23. Where 25 per cent of all documents were not retrievable, having being misplaced when transitioning from hard-copy to online record-keeping system by the six schools. The researcher deemed the available documents provided a degree of confidence in each school's commitment to a systemic school improvement approach.

Table 5.23 Document analysis sample documents

Documents	Strategic Improvement plan	Annual Improvement Plan	Annual Evaluations of Components	Cyclic Review	Total Documents
Collected	6 (100%)	19(57.9%)	23 (70%)	6 (100%)	54 (75%)
Missing	0	11 (42.1%)	7 (30%)	0	18 (25%)
Total	**6**	**30**	**30**	**6**	**72**

Table 5.24 shows a summary of the Systemic School Improvement Approach Key Areas, their number of components, and the percentage of the total components of the total systemic school improvement approach.

Table 5.24 Systemic school improvement approach: key areas and components

KEY AREA	NUMBER OF COMPONENTS	% OF TOTAL COMPONENTS
1. CATHOLIC LIFE AND RELIGIOUS EDUCATION	4	12.1
2. STUDENTS AND THEIR LEARNING	5	15.1
3. PEDAGOGY	7	21.2
4. HUMAN RESOURCES	5	15.1
5. RESOURCES, FINANCES, FACILITIES	4	12.1
6. PARENTS AND PARTNERSHIP	3	9.1
7. STRATEGIC LEADERSHIP AND MANAGEMENT	2	6.1
8. INFORMATION AND COMMUNICATION TECHNOLOGY	3	9.1
TOTAL	**33**	**100**

The systemic school improvement approach showed the percentage of total components with priorities in the following key areas: Pedagogy (21.2%); Students and their Learning (15.1%); Human Resources (15.1%); Catholic Life and Religious Education (12.1%); and Resources, Finances, Facilities (12.1%). The key area priorities guided and framed the document analysis for the HLG and LLG schools.

An initial overview of the documents showed that all schools in the study had implemented a systemic school improvement approach (Table 5.24), addressing the eight strategic key areas and a number of the components, as shown in Appendix R. Over a five-year cycle, these key areas and their components appear to have guided schools to be purpose-driven in their improvement journey and influenced student achievement. This was evident in the documentation for both the HLG and LLG schools (Table 5.25 and Table 5.28).

The document analysis for all schools indicated prioritisation of a minimum of six to seven components from thirty-three components in a year, with some schools repeating components in subsequent years, as shown in Appendix R. Emerging findings found schools focusing on too many key area and components, which can cause a work overload with little or no connections or alignment between the key areas for school improvement and their components and the daily work of classroom teachers and school leaders. A question of a

balance between internal and external priorities and accountabilities is discussed in later sections of this chapter.

In the next section of this chapter, the findings from the document analysis of how HLG and LLG schools' perception of a systemic school improvement approach influences student achievement are discussed. The findings for HLG and LLG schools are directed and framed according to the three dimensions identified in Chapter 2 from the literature: Direction and Purpose, Building Capacity, and Adaptability for Sustainability.

5.3.2.2 High Learning Gain (HLG) schools

The first salient dimension emerging from the literature discussed in Chapter 2 was **Direction and Purpose.** The analysis of documents for HLG schools is shown in Table 5.25. The document analysis showed that five out of eight key areas and ten out of thirty-three components were the priorities for the HLG schools over a five-year strategic cycle.

Table 5.25 Strategic priorities for direction and purpose for HLG schools

KEY AREA	COMPONENT	R1G1 HLG	R1B1 HLG	R2C1 HLG
1. CATHOLIC LIFE AND RELIGIOUS EDUCATION	1.1 VISION AND MISSION	2009	2011	2010 2012
	1.2 RELIGIOUS EDUCATION	2006		2007 2010 2011
2. STUDENTS AND THEIR LEARNING	2.1 EDUCATIONAL POTENTIAL	2007	2011	2007 2008 2011
	2.4 E-LEARNING	2010		2009 2010 2011
	2.5 PASTORAL CARE AND WELL-BEING	2009	2012	2007 2008 2012 2013
3. PEDAGOGY	3.3 TEACHING PRACTICE	2008	2011	2007 2008
	3.4 PLANNING, PROGRAMMING & EVALUATION	2007		2009 2012 2013
	3.5 PROFESSIONAL LEARNING	2007	2012	2009 2012
4. HUMAN RESOURCES	4.2 STAFF PROFESSIONAL DEVELOPMENT	2006		2008 2009 2010
5. RESOURCES, FINANCES, FACILITIES	5.1 RESOURCING OF LEARNING	2007		2007 2010

The documents analysed from HLG schools, as shown in Table 5.25, cited **Students and their Learning** and **Pedagogy** as the main areas that gave direction and purpose.

The documentation on 'Students and their Learning' identified the components *Educational Potential*, *E-learning*, and *Pastoral Care and Well-being* as priorities. The component *Educational Potential* indicated the provision for quality student learning in the documentation of two schools (R1G1HLG, R2C1HLG). Documents showed educational potential was characterised by collecting, analysing, and interpreting data to inform and monitor student learning. These data also informed the establishment of effective structures, policies, and practices. The *E-Learning* component, in documentation for two schools (R1G1HLG, R2C1HLG), directed the integration and use of contemporary digital technologies to enrich learning and challenge the students by promoting personalised learning. The purpose of pedagogy driven by technology was identified as an emerging shift in practice. Therefore, it is recognised in the school documents that classroom teachers must have a range of digital skills and knowledge to use technology to influence learning. The *Pastoral Care and Well-being* component for 'Students and their Learning' concentrated on caring for the welfare of students where a collaborative team approach to student pastoral care and well-being was evident in the documents for three schools (R1G1HLG, R1B1HLG and R2C1HLG). 'Pastoral Care and Well-being' were reviewed by the HLG schools and values were integrated in the curriculum. Student well-being was recognised as a priority component, with the documents identifying an important link to student achievement, suggesting this begins with strong and trusting relationships between the classroom teachers and students.

The documentation on 'Pedagogy' recognised the importance of *Teaching Practice*, *Planning*, *Programming and Evaluation*, and *Professional Learning* as giving direction and purpose that improved teaching. *Teaching Practice* was a priority in three schools (R1G1HLG, R1B1HLG, and R2C1HLG) and the analysis highlighted the importance of understanding pedagogy, which was informed by contemporary evidence-based research. The concept of teaching practice revealed explicit teaching is based on building strong foundations in literacy and numeracy skills. *Planning, Programming and Evaluation* in two schools (R1G1HLG, R2C1HLG) identified giving direction in creating opportunities for collaboration and professional dialogue. The analysis cited well-proven structures and effective practices that enabled teachers to engage in collaborative learning program planning. *Professional Learning* was another priority identified in the document analysis and specifically directed to improving teaching practice in three HLG schools (R1G1HLG, R1B1HLG, and R2C1HLG).

Professional learning was consistently characterised in documents by an individual and collective commitment to improving the quality of teaching practice.

Direction and purpose was also prominent in documents in the key area **Catholic Life and Religious Education** where the emphasis was on *Vision and Mission***.** The three school documents (R1G1HLG, R2C1HLG and R1B1HLG) cited examples regarding vision and mission. The vision and mission were linked closely to a system statement that directed the improvement agenda. The documents showed that the Catholic system had published two seminal statements on 'Vision and Mission' and an 'Archbishops Charter for Catholic Schools' in order to articulate the foundational beliefs and values on which it bases its decisions and recommendations. The thrust of these statements was purpose-driven and provided schools with documents to stimulate conversation, reflection, and discussion. The documents were useful in giving direction and purpose to schools and in helping they develop their own school vision and mission statement, while also assisting with their school improvement planning.

While each of the HLG schools included the system's vision and mission statement in their school improvement documents, it was evident from the document analysis that some schools had developed their own school statement (R2C1HLG), or planned to review it as part of their five-year strategic cycle in order to make their strategic plans more focused and relevant to the context of their school community (R1G1HLG). The other school (R1B1HLG) utilised the Catholic system's vision and mission statement.

The documents showed that vision and mission statements gave a purpose to the schools' priority in developing the student as a whole person: educationally, spiritually, morally, and with a social purpose. The statements also articulated the moral purpose or the dual moral purpose within the evangelising mission of the Catholic Church, which identified the schools' traditions and/or charism, with a focus on evangelisation and student learning in HLG schools.

The final two key areas that had priority from the analysis shown in Table 5.25 were **Human Resources** and **Resources, Finances, Facilities**. The main direction and purpose for Human Resources focused on *Staff Professional Development* in two schools (R1G1HLG, R2C1HLG), promoting and enabling the acquisition of professional knowledge, and engaging in educational research to enhance leadership for learning. For Resources, Finances, Facilities, the emphasis in two school documents (R1G1HLG, R2C1HLG) was on *Resourcing of Learning*

in providing resources that enabled teachers to consistently create a stimulating learning environment and engage students in their learning.

Building Capacity was the second salient dimension emerging from the literature and the document analysis for HLG schools is shown in Table 5.26. The documents analysed cited examples of how a systemic school improvement approach builds teacher and leadership capacity in schools.

Table 5.26 Strategic priorities for building capacity for HLG schools

KEY AREA	COMPONENT	R1G1 HLG	R1B1 HLG	R2C1 HLG
3. PEDAGOGY	3.3 TEACHING PRACTICE	2008	2011	2007 2008
	3.5 PROFESSIONAL LEARNING	2007	2012	2009 2012
4. HUMAN RESOURCES	4.2 STAFF PROFESSIONAL DEVELOPMENT	2006		2008 2009
	4.4 BUILDING LEADERSHIP CAPACITY	2010		2010

The document analysis (see Table 5.26) cited **Pedagogy** and **Human Resources** as the key area priorities of a systemic school improvement approach that built capacity. All schools (R1G1HLG, R1B1HLG, and R2C1HLG) prioritised pedagogy. Pedagogy emphasised *Teaching Practice* where teacher capacity was underpinned and informed by contemporary evidence-based research. This allowed classroom teachers to collaborate regularly to reflect on their practice, ensuring that their students engaged in learning. Closely associated with teaching practice was *Professional Learning.* The analysis highlighted teacher capacity-building strategies in the three schools' (R1G1HLG, R1B1HLG, and R2C1HLG) where professional learning was characterised by opportunities for dialogue and promotion of effective networking, and where it was internally driven, providing a greater chance for team learning.

The **Human Resources** key area emphasised the component *Staff Professional Development* in all three schools (R1G1HLG, R1B1HLG, and R2C1HLG). The document analysis identified professional development strategies (as distinct from professional learning) to strategically plan approaches for staff to promote continuous school improvement through, for example, staff mentoring and coaching opportunities. Closely associated with capacity building was the component *Building Leadership Capacity*. Only one school (R1G1HLG) identified this component in their documents. Nevertheless, the analysis of the documents for all HLG schools had a clearly designated person who coordinated or was responsible for leading a key area and its associated component. In one school (R1B1HLG) it was evident that only

one or two people were responsible for leading a key priority that was identified by the school. In the other two schools (R1G1HLG, R2C1HLG), responsibility for leading a key priority and the component fell to five or six people. A closer analysis of school planning documents revealed a systemic school improvement approach was the responsibility of not only the principal, but also the school leadership team. It became clearer in the analysis that such responsibility was closely aligned to the school leadership role; for example, in the documentation for school R2C1HLG the key priority 'Catholic Life and Religious Education' was the responsibility of the Religious Education Coordinator, while 'Students and their Learning' was the Curriculum Coordinator's; 'Pedagogy' the Learning Coordinator's; 'Human Resources' the Assistant Principal's; and 'Resources, Finances, Facilities' the principal's.

The documentation indicated a distributive leadership model existed in school leadership teams. The documents showed a similar alignment of role and responsibility for key areas, their associated components, and the strategies in the school annual planning. There was no evidence of any key areas and their associated components in the documentation indicating coordinator or teacher leadership. However, after further analysis of annual planning documentation, one school (R1G1HLG) showed that although faculties, coordinators, and teachers may not have had leadership responsibility for a key area, they were engaged with the associated component of the annual plans. This result complements the findings from analysis of the questionnaire short answer, question D3: 'Please share an example of the way the SRI Framework has influenced the capacity building of teams and faculties in your school'. This was discussed in Chapter 5, where the open question provided a number of consistent examples of teachers, coordinators, and their faculties engaging collaboratively with key, targeted components of the systemic school improvement approach as an explicit teaching team. The documents indicated that a model of shared leadership existed in the schools between teachers, coordinators, and their faculties.

The final salient dimension emerging from the literature was **Adaptability for Sustainability**. The analysis of documents is shown in Table 5.27, demonstrating the most common emerging priorities.

Table 5.27 Strategic priorities for adaptability for sustainability for HLG schools

KEY AREA	COMPONENT	R1G1HLG	R1B1 HLG	R2C1 HLG
7. STRATEGIC LEADERSHIP AND MANAGEMENT	7.1 STRATEGIC LEADERSHIP	2009	2011	2009 2010 2013
	7.2 CULTURE OF IMPROVEMENT AND TRANSFORMATION	2010		2007

The document analysis cited the key area of **Strategic Leadership and Management** as the priority of a systemic school improvement approach for adaptability for sustainability. All HLG schools (R1G1HLG, R1B1HLG, and R2C1HLG) prioritised *Strategic Leadership* and two schools (R1G1HLG, R2C1HLG) identified *Culture of Improvement and Transformation***.**

The documents indicated *Strategic Leadership* as leading purposefully for sustained student-centred school performance. School leaders were proactive in improving their schools' core priorities and they were explicitly stated in their school improvement documentation. Data on student outcomes were highlighted as crucial for data collection, analysis, and reporting. Closely connected with *Strategic Leadership* was *Culture of Improvement and Transformation*. The document analysis highlighted this as a priority in two schools (R1G1HLG, R2C1HLG). A *Culture of Improvement and Transformation* was characterised in creating practices that support improvement, transformation, and sustainability aligned to student learning. Document evidence indicated adaptability with educational changes, especially in the area of new curriculum syllabus requirements. It was evident in the documents that a commitment to continuous improvement and collaboration was encouraged across the school and that there were high expectations for, and a commitment to, improving student achievement.

5.3.2.3 Low Learning Gain (LLG) schools

The analysis of documents for **Direction and Purpose** for LLG schools is shown in Table 5.28. The analysis shown in Table 5.28 indicates five from eight key areas, and ten from thirty-three components that were the priorities for the LLG schools over a five-year strategic cycle. The number of key areas and their components was similar to the HLG schools, although some of the components did vary depending on the school's improvement priority.

Table 5.28 Strategic priorities for direction and purpose for LLG schools

KEY AREA	COMPONENT	R1G2L LLG	R1B2 LLG	R2C2 LLG
1. CATHOLIC LIFE AND RELIGIOUS EDUCATION	1.1 VISION AND MISSION	2012	2012	2008
			2013	2009
				2010
				2011
	1.3 CATHOLIC LIFE AND CULTURE	2011	2013	2009
				2010
				2011
				2012
2. STUDENTS AND THEIR LEARNING	2.1 EDUCATIONAL POTENTIAL		2011	2010
			2012	2011
				2012
	2.3 REPORTING STUDENT PROGRESS AND ACHIEVEMENT	2012	2013	2009
		2013		2010
	2.4 E-LEARNING	2011	2011	2008
		2012	2012	2009
		2013		2011
				2012
	2.5 PASTORAL CARE AND WELL-BEING		2013	2009
				2010
				2011
				2012
3. PEDAGOGY	3.2 DIVERSITY OF LEARNERS	2013	2011	2009
			2012	2010
			2013	2011
				2012
	3.3 TEACHING PRACTICE	2011	2011	2010
			2012	2011
			2013	2012
4. HUMAN RESOURCES	4.2 STAFF PROFESSIONAL DEVELOPMENT	2012	2013	2009
				2010
				2011
				2012
5. RESOURCES, FINANCES, FACILITIES	5.1 RESOURCING OF LEARNING		2011	2008
			2012	2009
				2010
				2011
				2012

The document analysis for LLG schools (shown in Table 5.28) cited key areas **Students and their Learning**, **Pedagogy**, and **Catholic Life and Religious Education** as priority components of a systemic school improvement approach that gave direction and purpose.

The documentation on 'Students and their Learning' identified the components *Educational Potential*, *Reporting Student Progress and Achievement*, *E-learning* and *Pastoral Care and Well-being* as school priorities. The component *Educational Potential* concentrated on providing for quality student learning in documents for two schools (R1B2LLG, R2C2LLG). LLG schools showed educational potential was characterised by maintaining high academic standards and tracking student achievement data. These data would inform the development of teaching programs and processes to cater for the needs of all learners. The documented evidence showed the school's moral purpose was to ensure that every student,

regardless of their learning context, had the opportunity to reach their educational potential. *Reporting Student Progress and Achievement* was a priority across the three LLG schools (R1G2LLG, R1B2LLG, and R2C2LLG). The analysis indicated approaches for engaging students in dialogue about their learning performance and providing feedback, reviewing report processes, and demonstrating a shared understanding of the school's approach to evidence-based reporting. The *E-learning* component for the three schools (R1G2LLG, R2C2LLG, and R1B2LLG) was a priority and schools repeated this priority over subsequent years. Similar to the HLG schools, LLG schools have strategically directed the integration and use of contemporary digital technologies to enrich learning. Their documents recognise that schools must have a range of contemporary digital technologies and knowledge to influence learning. *Pastoral Care and Well-being* was identified as a priority in two schools (R2C2LLG, R1B2LLG). As with the HLG schools, its values were integrated into school programs. With student well-being being a priority, for both LLG and HLG schools, the documents consistently reinforced the link to student achievement beginning with a good relationship between the teachers and students.

Table 5.28 shows **Pedagogy** recognised *Diversity of Learners* and *Teaching Practice* as giving direction and purpose that improved teaching. *Diversity of Learners* was a priority in the three schools (R1G2LLG, R1B2LLG, and R2C2LLG) and, for subsequent years, in two schools (R1B2LLG, R2C2LLG). Documents showed *Diversity of Learners* was characterised by an inclusive approach in the classroom, based on a deep understanding of diversity in learners that recognised each student's potential and consistently tried to differentiate the curriculum to support the individual learner. *Teaching Practice* was a priority in all three schools (R1G2LLG, R1B2LLG, and R2C2LLG) but more so in two schools (R1B2LLG, R2C2LLG) over successive years. Similar to the HLG schools, the analysis indicated the importance of understanding pedagogy informed by recent evidence-based research. The notion of teaching practice in the documentation revealed explicit teaching starts with building strong foundations in literacy and numeracy and engaging students in their learning.

Direction and purpose was a key area priority of **Catholic Life and Religious Education** with an emphasis on *Vision and Mission* and *Catholic Life and Culture*. Three school documents (R1G2LLG, R2C2LLG, and R1B2LLG) cited examples regarding vision and mission. As with the HLG schools, the vision and mission was linked closely to the system statement and directed the improvement agenda. While each of the LLG schools included the school system's vision

and mission statement in their school improvement documentation, it was evident from the document analysis that the three LLG schools (R1G2LLG, R2C2LLG, and R1B2LLG) had developed their own school vision and mission statement. These school statements articulated the development of the whole person and the dual moral purpose within the evangelising mission of the Catholic Church and student learning. *Catholic Life and Culture* was a priority across all three LLG schools (R1G2LLG, R1B2LLG, and R2C2LLG) and for successive years in one school (R2C2LLG). Under this priority, documents showed that schools strategically provided a diverse range of evangelising, catechising, and faith formation opportunities for school staff, students, and families.

The final two key areas that had priority from the analysis shown in Table 5.28 were **Human Resources** and **Resources, Finances, Facilities**. The main direction and purpose for Human Resources focused on *Staff Professional Development* in all three schools (R1G2LLG, R1B1LLG, and R2C2LLG) and in successive years in one school (R2C2LLG). The orientation of the staff development aligned to strategic priorities was evident. **Resources, Finances, Facilities** was the priority in two school documents (R1B2LLG, R2C2LLG) for successive years. Its main purpose was *Resourcing of Learning*, which enabled teachers to consistently create a stimulating learning environment and engage students in their learning. This was also evident in the HLG schools.

Building Capacity priorities from the document analysis for LLG schools are shown in Table 5.29. The documents analysed cited examples of how a systemic school improvement approach built teacher and leadership capacity in their schools.

Table 5.29 Strategic priorities for building capacity for LLG schools

KEY AREA	COMPONENT	R1G2 LLG	R1B2 LLG	R2C2 LLG
3. PEDAGOGY	3.3 TEACHING PRACTICE	2011	2011	2010
			2012	2011
			2013	2012
	3.5 PROFESSIONAL LEARNING	2011		
4. HUMAN RESOURCES	4.2 STAFF PROFESSIONAL DEVELOPMENT	2012	2013	2009
				2010
				2011
				2012
	4.4 BUILDING LEADERSHIP CAPACITY	2010		2010
				2011
				2012

The document analysis for LLG schools cited the key areas of **Pedagogy** and **Human Resources** as the key area priorities of a systemic school improvement approach that builds

capacity. **Pedagogy** had a high priority in all LLG schools (R1G2LLG, R2C2LLG, and R1B2LLG). Pedagogy, as in HLG schools, prioritised *Teaching Practice* in the three schools (R1G2LLG, R1B2LLG, and R2C2LLG) with subsequent years in two schools (R2C2LLG, R1B2LLG). Building teacher capacity occurred through collaborative approaches to teaching, sharing successful teaching practices, opportunities for mentoring, and training in current pedagogy. Closely associated with teaching practice was *Professional Learning*, although only in one school (R1G2LLG). The professional learning in this one school built teacher capacity where staff were encouraged to learn from each other, interact across teams, network with other schools, and take individual and collective responsibility for their own professional learning.

In the **Human Resources** key area, all three schools prioritised the component *Staff Professional Development* (R1G2LLG, R1B2LLG, and R2C2LLG) and in subsequent years in one school (R1C2LLG). The document analysis identified staff professional development strategies (as distinct from professional learning) to plan strategically, align to the improvement priorities based on teacher needs, and track teacher professional development. Closely related to capacity building was the component *Building Leadership Capacity*. Two schools (R1G2LLG, R2C2LLG) identified this component in their documents, with one school (R2C2LLG) prioritising it in successive years. Nevertheless, as with the HLG schools, the analysis of the documents for all LLG schools had a clearly designated person who coordinated or was responsible for leading a key area, with its associated component. On further analysis of the documents, the approach became the responsibility of not only the principal, but also the school leadership team. The documentation indicated a distributive leadership model existed within the school leadership teams. This notion of building leadership capacity extended to those teachers, coordinators, and faculties that were engaging collaboratively with key, targeted components of the systemic school improvement approach as an explicit teaching team. The documentation also indicated that a shared leadership model existed in the schools between teachers, coordinators, and their faculties.

The strategic priority for **Adaptability for Sustainability** is shown in Table 5.30 and one emerging priority for LLG schools.

Table 5.30 Strategic priorities for adaptability for sustainability for LLG schools

KEY AREA	COMPONENT	R1G2L LLG	R1B2 LLG	R2C2 LLG
7. STRATEGIC LEADERSHIP AND MANAGEMENT	7.1 STRATEGIC LEADERSHIP	2011 2013	2012 2013	2008 2009

The document analysis cited the key area of **Strategic Leadership and Management** as the only key area priority for adaptability for sustainability. All LLG schools (R1G2LLG, R1B2LLG, and R2C2LLG) prioritised *Strategic Leadership* and for successive years.

The documentation analysis on strategic leadership showed schools leading purposefully a culture of evidence-based self-review and improvement. The strategic leadership was characterised by an alignment of plans, processes, and practices linked to staff professional-growth plans. Effective processes also existed for planning, monitoring, reviewing, and reporting on student achievement for future improvement that was data-informed.

Table 5.31 shows a summary of the key emerging priorities from the documents for HLG and LLG schools. The table also indicates the total number of years for which they were priorities.

Table 5.31 Summary HLG and LLG school comparison

		High Learning Gain (HLG) Schools		Low Learning Gain (LLG) Schools	
Salient Dimension	**Key Area**	**Component**	**Total Number Years**	**Component**	**Total Number Years**
Direction and Purpose	1. Catholic Life and Religious Education	1.1 Vision and Mission 1.2 Religious Education	4 4	1.1 Vision and Mission 1.3 Catholic Life and Culture	7 6
	2. Students and their Learning	2.1 Educational Potential 2.4 E-learning 2.5 Pastoral Care and Well-being	5 4 6	2.1 Educational Potential 2.3 Reporting student progress & achievement 2.4 E-learning 2.5 Pastoral Care and Well-being	5 5 9 5
	3.Pedagogy	3.3 Teaching Practice 3.4 Planning, programming & evaluation 3.5 Professional Learning	4 4 4	3.2 Diversity of Learners 3.3 Teaching Practice 3.5 Professional Learning	8 7 1
	4. Human Resources	4.2 Staff Professional Development	2	4.2 Staff Professional Development	6
	5. Resources, Finances, Facilities	5.1 Resourcing of learning	3	5.1 Resourcing of learning	7
Building Capacity	3. Pedagogy	3.3 Teaching Practice 3.5 Professional Learning	4 4	3.3 Teaching Practice 3.5 Professional Learning	7 1
	4. Human Resources	4.2 Staff Professional Development 4.4 Building Leadership Capacity	2 3	4.2 Staff Professional Development 4.4 Building Leadership Capacity	6 4

ADAPTABILITY FOR SUSTAINABILITY	7. STRATEGIC LEADERSHIP AND MANAGEMENT	7.1 STRATEGIC LEADERSHIP 7.2 CULTURE OF IMPROVEMENT AND TRANSFORMATION	4 1	7.1 STRATEGIC LEADERSHIP	7

The document analysis findings on the dimension **Direction and Purpose** indicated that HLG and LLG schools consistently had a strong sense of dual moral purpose in faith and in teaching and learning, with a focus on what matters most in mapping a pathway for improving or sustaining student achievement. The document evidence indicated a sense of an improvement-culture with high expectations in the schools, underpinned by a set of shared beliefs and values driving their moral purpose. The school documents revealed a strong understanding of what they valued in both HLG and LLG schools. With a focus on student learning and teaching practice, the documents showed a good understanding of their current situation, knowing where they are as a school, and the student achievement outcomes they wished to improve on given the diverse needs of the students. Table 5.31 shows that the LLG schools had this as a higher priority. The documents analysed directed schools in the explicit changes in teaching practice they needed to implement to gain desired outcomes in student achievement. The school documents showed that strategic planning that is well structured with a collaborative approach drives improvement.

The document analysis findings for the dimension **Building Capacity** indicated that HLG and LLG schools have a consistent sense of a learning culture, where continuous school improvement depends on the classroom teacher and school leaders learning how to improve. Building on the notion of well-structured school improvement planning through a collaborative approach, providing reflection time on what has been learned was evident, especially in the annual improvement planning. Evidence in documents suggested schools have aimed to build collaborative structures to nurture a culture of learning and engagement in faculty and staff meetings, including school professional learning days. These opportunities allow classroom teachers, coordinators, and school leaders to co-learn, mentor or coach, by enabling meaningful conversations focused on the improvement of teacher practice. School planning, while encouraging collaboration across the school, also highlighted the need for school leaders to have good team-building skills that allowed teachers to build trusting relationships and to work together collaboratively. In the documents, the capacity building of principals highlighted the idea of distributed leadership among the school leadership team. However, the notion of building leadership capacity needs to extend further to coordinators and classroom teachers as instructional leaders

through a model of shared leadership. A distributive and/or shared leadership approach not only builds the capacity of staff in the school, it also leaves principals free to focus on both their instructional leadership and not on operational matters, which can consume so much of their time; this is highlighted in Section 5.2.4.2 Building capacity salient dimension. The idea of principals operating substantially as instructional leaders must be the priority if achievement for all students is to be improved and sustained in the future.

The document analysis findings for the dimension **Adaptability for Sustainability** showed a commitment by the HLG and LLG schools to creating a learning culture and the practice of continuous improvement to become a self-reviewing, self-improving, effective school with students at the centre. This was evident in both HLG and LLG schools' planning documents. Their schools' knowledge of where they are in their improvement and their moral purpose was reflected in the school priorities and goals; however, there was no sense in the documentation of where they wanted to be with student learning in the years ahead. The school leadership planning was directed by strategic thinking underpinned by the quality of planning in the documents. This was evidenced by a clear design and implementation approach, naming the strategies the schools proposed using to improve on current school practices and student achievement. The documents showed the schools' use of trends and comparative data to push strategies and establish where the school was positioned, to self-reflect on the effectiveness of implemented strategies and on the impact on what has been learned. The documents also identified what would be necessary in terms of staff professional learning, and evaluation of policy and practice. The documents for HLG and LLG schools monitored improvements and reflected annually upon what had been learned to assist in the planning for the next year's priorities, which were reported annually to the school community and public. Adaptability for sustainability was evident in the school improvement documents.

In summary, analysing the HLG and LLG schools' documents against the literature's salient dimensions of 'Direction and Purpose', 'Build Capacity' and 'Adaptability for Sustainability', and also based on the schools' learning gains, from the qualitative analysis of the documents and the secondary schools' learning gain—across both regions of this study—there was no evidence that students were disadvantaged by a systemic school improvement approach.

What emerged from the document analysis was that, in building the capacity of others, members of school leadership teams have developed leadership skills both as individuals

and collectively. In the documents, collectively, engagement was evident by respectful relationships informed by Catholic values, committed to the dual moral purpose of evangelisation and providing authentic learning experiences for all students.

The school document analysis showed that priorities had a shared sense of purpose, along with a clear approach to improvement. The growing body of educational research and evidence regarding what works to improve student educational outcomes has informed this approach. The work of the school leadership team has resulted in principles that underpin school improvement, which have been internalised and acted upon by many school staff. There is a deep penetration of the key improvement approach throughout the schools involved in the study, as well as in school leadership teams and classroom teachers; in particular, school leaders understand the school improvement approach, are clearly committed to it, and are working with their staff to make it a reality.

The improvement document analysis indicated building a learning culture of empowerment throughout the schools. There was a clear understanding that it was the classroom teachers who needed to be empowered to improve student achievement. This principle of empowerment is not only respectful of classroom teachers but also reinforces the role of the principal in building the capacity of school leadership teams and classroom teachers so that they are better equipped to generate improvement in their schools. The document analysis results indicated that empowerment occurs when the principal has a sense of meaning and of involvement, including a sense of internal accountability and capability, and can influence something important. In fact, similar evidence about the classroom teacher, school leadership, and school learning culture emerged from the analysis of the questionnaire results, which are further explored using findings from the semi-structured interviews with the six principals. The results from the document analysis and the examples have identified a systemic school improvement approach as having an influential impact on the students, classroom teachers, school leadership and, finally, the school learning culture.

These results also suggested that a systemic school improvement approach works well in giving direction and purpose, building the capacity of classroom teachers and school leaders, and allowed for adaptability for sustainability. This was characterised by the approach being driven by moral purpose, a focus on quality teaching practice by building teacher capacity, and an emphasis on learning using data to monitor and provide feedback on student achievement. In addition, a culture of learning and improvement existed where leadership

was becoming instructionally focused, and teaching, learning, and improvement strategies were becoming more precise. A systemic school improvement approach takes student learning seriously; therefore, student achievement benefits.

A significant difference between the HLG schools and LLG schools was that the LLG schools were spending longer on school improvement key areas and components and yet remained in the school improvement cycle as LLG performing schools. Does this suggest that the key areas and components are ineffective in the face of other factors beyond school improvement that are more important—for example, socioeconomic factors, quality of the staff or teaching practice—or are LLG schools starting from a higher student learning base and therefore learning gain is not as obvious as in the HLG schools? This study hopes to explain why the LLG schools' efforts are not in vain.

5.3.3 Semi-structured interviews

The semi-structured interviews were the final mixed-methods approach adopted for this study in the sequential explanatory design, discussed in Chapter 3 (Section 3.5 Mixed-methods Approach) with the purpose of overcoming the limitations of any single research design. The main benefit in seeking complementary data was thus to allow the qualitative findings from the document analysis and semi-structured interviews to enhance the understanding of the quantitative and qualitative results from the questionnaire and the qualitative results from the document analysis presented earlier in sections of this chapter.

This section seeks to answer the question: **To what extent can systemic school improvement approaches, developed collaboratively with the schools and introduced across a system of schools, influence student achievement, from the perception of six principals?** These principals were from those schools whose documents were analysed and the results presented in the previous section of this chapter.

This section presents the results of semi-structured interviews conducted with the same three HLG and three LLG secondary schools across two of the three regions within the metropolitan Catholic School system. The semi-structured interview questions asked principals to consider to what extent a systemic school improvement approach provides direction and purpose; whether it helps to build capacity; and whether it helps the school to adapt for sustainable and continuous improvement in student achievement. The data and

results from the six semi-structured interviews are reported in the following sections under HLG schools and LLG schools.

5.3.3.1 Principals participating

In this study, as discussed in Chapter 3 (Section 3.4.1 Secondary school leadership team), the principal was considered the person who had the most comprehensive understanding of the school and systemic school improvement strategies. The principal in the metropolitan Catholic School system is responsible for school educational performance. Overall, there is a significant emphasis on the role of instructional leadership rather than on an operational role in the school. Principals' main responsibility is to lead the teaching and learning agendas in their schools and they customarily play the leading role in the local implementation of systemic school improvement strategies. The principal is also accountable for the appointment and induction of classroom teachers and school leaders, and responsible for leading significant systemic school improvement practices.

The perceptions of the principals were gained through semi-structured interviews, which were essentially 'a conversation with a purpose' (Lincoln & Guba, 1985), involving a face-to-face meeting with an external interviewer. The external interviewer directed questions towards understanding a principal's perspective on their experiences, expressed in their own words (S. J. Taylor & Bogdan, 1998), in answering the research question of this study.

5.3.3.2 Data analysis of semi-structured interviews

The semi-structured interview analysis was done after the six interviews were digitally recorded and transcribed for analysis. The researcher adopted the same general analytical approach of thematic analysis as for the document analysis. The transcripts were coded into broad themes by the researcher as directed by the literature review, which guided and framed the research question and interview questions to create an initial template of coded quotes. The transcripts were cross-checked and validated by the principal to endorse their interpretation. The researcher decided to commence coding with the three HLG schools, followed by the three LLG schools. These templates of coded quotes by the researcher were then subjected to a more detailed manual analysis by two other critical experts for inter-rater reliability. The two critical experts were the research assistant and a professional officer from the metropolitan Catholic School system. The critical experts were selected because of their educational background working in the Catholic metropolitan system of schools, their knowledge of the systemic school improvement approach, and their

educational experiences. The critical experts were not familiar with this study so the questionnaire and document analysis findings made them suitable as independent raters for inter-rater reliability.

A broad higher-order code helped provide an overall view of the direction of the interviews, while detailed lower-order codes allowed fine distinctions to be made, both within and between themes (Gwet, 2012; King, 2004).

The two critical experts read and coded the interview transcripts, identified quotes independently, and discussed and refined the coding. The process was repeated until an acceptable level of agreement was reached. The inter-rater reliability comparisons are shown in Table 5.32.

Table 5.32 Inter-rater reliability comparisons

	Raters 1[1] & 2		**Raters 2 & 3**		**Raters 1 & 3**	
Principal Transcripts	**Agree**	**Disagree**	**Agree**	**Disagree**	**Agree**	**Disagree**
R2C2LLG	29	21	34	16	44	6
R1G2LLG	21	9	26	4	25	5
R1B2LLG	30	25	34	21	49	6
R1B1HLG	41	18	45	14	52	7
R1G1HLG	18	7	20	5	23	2
R2C1HLG	21	3	21	3	24	0
Total	**160[2]**	**83**	**180[3]**	**63**	**217[4]**	**26**
Total Texts	**243**		**243**		**243**	
Mean	26.67	13.83	30.00	10.50	36.17	4.33
SD	8.50	8.73	9.53	7.50	13.59	2.73
Ratio Agree: Disagree	1.93		2.86		8.35	
Simplified Ratio Agree: Disagree	2:1		3:1		8:1	

Note:
1: Rater 1=Researcher, Rater 2= Professional Officer, Rater 3= Research Assistant
2: P(Agree>=160) <.01
3: P(Agree>=180) <.01
4: P(Agree>=217) <.01

Table 5.32 shows the results of the inter-rater reliability comparisons of the three independent raters of the six interview transcripts: R2C2LLG, R1G2LLG, R1B2LLG, R1B1HLG, R1G1HLG, and R2C1HLG. Rater 1 was the principal researcher; Rater 2 was a professional officer; Rater 3 three was the research assistant for data collecting. The three raters sought to obtain an independent analysis of the six semi-structured interview transcripts and to determine the extent to which the three analyses provided a consistent yet independent reliability comparison. Table 5.32 shows the numbers of times all of the raters were in

agreement in their coding on each of the six transcripts. A total of 243 common passages or sub-texts emerged from the analyses of the six transcripts. The coding for each of these 243 common passages was compared for each pair of raters (shown as Raters 1 and 2, Raters 2 and 3, and Raters 1 and 3 in Table 5.32) and were classified as to whether the coding was in agreement or not. This gave rise to a simple binomial distribution of the inter-rater comparisons and a means for determining whether the pattern of agreements versus disagreements on coding for each rating pair was statistically significant from that obtained by random selection alone. All three inter-rater reliability comparisons were statistically significant at the $p<0.01$.

Table 5.32 presents the agreement on the coding of the 243 common passages is as follows: Raters 1 and 2 have 66%; Raters 2 and 3 have 75%; and finally Raters 1 and 3 have 89% agreement. Across the three raters, there was a high level of agreement on the coding of the six transcripts with an aggregated agreement of 77%.

The remaining sections of this chapter, the presentation of results from the semi-structured interviews, are directed and framed according to the three dimensions identified from the literature review in Chapter 2 – Direction and Purpose, Building Capacity and Adaptability for Sustainability. The data presented in this chapter address how principals from either HLG or LLG schools perceived the systemic school improvement approach influencing student achievement.

5.3.3.3 High Learning Gain (HLG) schools

The first salient dimension emerging from the literature discussed in Chapter 2 was **Direction and Purpose.** The analysis of the semi-structured interview with principals from HLG schools is shown in Table 5.33 with quoted examples shown in Appendix T.

Table 5.33 Direction and purpose for HLG schools

Theme	School	Rank Order	Aggregated Frequency
Vision/Mission	R1G1 R2C1 R1B1	1	12
Moral Purpose	R1G1 R1B1	2	8
Alignment	R1G1 R1B1	3	6
Goals	R2C1 R1B1	4	4
Priorities	R2C1	5	2

The principals interviewed from HLG schools mentioned the theme **Vision/Mission** as the most significant example of a systemic school improvement approach that gave direction and purpose. All three principals (from R1G1HLG, R2C1HLG, and R1B1HLG) cited examples regarding vision and mission. The vision and mission was linked closely to the system statement, directed the improvement agenda, and was revisited towards the end of each year. Relating to this theme, two principals (R2C1HLG and R1B1HLG) cited **Moral Purpose** as the second most significant theme, which focused on why schools exist, and took into account the local school context. The third significant theme mentioned by two principals (R2C1HLG, R1B1HLG) related to **Alignment**. Principals cited examples of a systemic school improvement approach providing alignment from the classroom to the school, to the whole-school system and all moving in a similar direction with connection between the system's strategic direction and school improvement planning.

The final emerging themes from the analysis shown in Table 5.33 for the direction and purpose for HLG schools concentrated on **Goals** and **Priorities**. The aggregated frequency of responses from two principals was low in significance compared to the other emerging themes from principals. One principal (from R1B1) mentioned that a systemic school improvement could give too much direction and be inflexible in allowing schools to meet the same need in their own school but for their particular context. This 'one size fits all' notion could be restrictive in the sense that schools were not directly working on school-driven priorities but on system-driven priorities. The same principal thought a systemic school improvement approach could be interpreted as an external accountability tool by putting unnecessary pressure on schools.

Building Capacity was the second salient dimension emerging from the literature and the analysis for HLG schools is shown in Table 5.34 with quoted examples shown in Appendix U. The interviews with principals were dominated by the notion of capacity building, with many examples of how a systemic school improvement approach built the teacher and leadership capacity in their schools.

Table 5.34 Build capacity for HLG schools

THEME	SCHOOL	RANK ORDER	AGGREGATED FREQUENCY
COLLABORATION	R1G1 R2C1 R1B1	1	15
TEACHER CAPACITY	R1G1 R2C1	2	14

	R1B1		
Leadership	R1G1 R2C1 R1B1	3	10
Professional Learning	R1G1 R2C1 R1B1	4	9
Coordinator Capacity	R1G1 R2C1 R1B1	5	5

The principals interviewed from HLG schools mentioned the theme *Collaboration* as the most significant example of a systemic school improvement approach that built capacity. All three principals (from R1G1HLG, R2C1HLG, and R1B1HLG) cited examples of collaboration as building the collective capacity of the school through practices of consultation, mentoring, and peer observations in the classroom. Closely related to the collaboration theme, the principals from R1G1HLG, R2C1HLG and R1B1HLG schools mentioned examples of building *Teacher Capacity* as the second most significant theme. These principals provided many examples of building teacher capacity in their schools, recognising that, if any improvement was to occur in student achievement, it happened in the classroom. The third significant theme mentioned by the three principals related to *Leadership*. The principals predominately cited examples of implementing a systemic school improvement approach as the responsibility of the school leadership team. The notion of a distributive or shared leadership was evident in the example with Leadership Team members being responsible for key improvement areas of the school's strategic improvement plan. This was also a theme that emerged from the document analysis results presented earlier in this chapter.

The final emerging themes mentioned from the analysis shown in Table 5.34 for capacity building in HLG schools concentrated on *Professional Learning* and *Building Coordinator Capacity.* The aggregated frequency of responses from the three principals was of lower significance compared to the other emerging themes.

The final salient dimension emerging from the literature was **Adaptability for Sustainability**. The analysis of the principal interview transcripts is presented in Table 5.35 together with the most common emerging themes. The quoted examples are shown in Appendix V.

Table 5.35 Adaptability for sustainability for HLG schools

Theme	School	Rank Order	Aggregated Frequency
Data	R1G1 R2C1 R1B1	1	11
Continuous	R1G1	2	7

IMPROVEMENT	R2C1 R1B1		
COLLABORATION	R1G1 R2C1 R1B1	3	6
PLANNING	R1G1 R1B1	4	5
EDUCATIONAL CHANGE	R1G1	5	4

The principals interviewed from HLG schools named the theme *Data* as the most significant example of a systemic school improvement approach that informs adaptability for sustainability. All three principals from R1G1HLG, R2C1HLG and R1B1HLG quoted examples regarding data. Principals gave data examples as crucial in improving student achievement by knowing the learner, and monitoring, evaluating and reflecting on practices. Principals also named data as informing strategic directions for their school. Closely related to the data theme, all principals from R1G1HLG, R2C1HLG and R1B1HLG schools saw *Continuous Improvement* as the second most significant theme. The examples reflected a culture of high expectation and aspirations to be a self-reviewing and improving school to ensure sustainability. The third significant theme from the three principals related to *Collaboration*, which was a significant theme emerging, as shown in Table 5.34. The principals predominately gave examples of communication and consultation, staff working together on agreed understandings, and sharing of ideas and resources. One principal from R1B1 school shared an example of the need for greater collaboration between students and staff.

The final emerging themes from the analysis shown in Table 5.35 for adaptability for sustainability in HLG schools concentrated upon *Planning* and *Educational Change*. The aggregated frequency of responses from the principals was of lower significance compared with the other emerging themes.

5.3.3.4 Low Learning Gain (LLG) schools

The analysis of the semi-structured interview with principals is shown in Table 5.36. The quoted examples are shown in Appendix W.

Table 5.36 Direction and purpose for LLG schools

THEME	SCHOOL	RANK ORDER	AGGREGATED FREQUENCY
ALIGNMENT	R1G2 R2C2 R1B2	1	12
MORAL PURPOSE	R2C2 R1B2	2	10

GOALS	R1G2 R2C2 R1B2	3	6
VISION/MISSION	R2C2	4	5
LEADERSHIP	R2G2	5	3

The principals interviewed from LLG schools named *Alignment* as the most significant example of a systemic school improvement approach that gave direction and purpose. All three principals from schools R1G1LLG, R2C1LLG and R1B2LLG gave examples regarding alignment. The alignment theme provided examples that connected the system's strategic plan to the school's strategic improvement plan with the associated alignment with policy and practices. Alignment was also cited with educational research and was guided by a systemic school improvement approach. Relating closely to alignment, the three principals mentioned *Moral Purpose* as the second most significant theme, similar to the results in Table 5.36. The central focus of examples mentioned by the principals was the student—that is, student learning, student growth, student achievement. The third significant theme from the three principals related to an attention on *Goals*. Principals gave examples of understanding how goals give direction to key improvements and how subsequent alignment with the goals is achieved. Principals also mentioned the importance of a connection between goals, strategic action, and those measurements in place to monitor improvement. This was thought-provoking given the strong emphasis on vision and mission in the document analysis.

The final emerging themes from the analysis shown in Table 5.36 for the direction and purpose for LLG schools concentrated on *Vision/Mission* and *Leadership*. The aggregated frequency of responses from two principals showed a lower significance compared to the other emerging themes from principals.

Building Capacity was the second salient dimension emerging from the literature and the analysis for LLG schools is shown in Table 5.37. The interviews with principals strongly dominated a conversation regarding capacity building, citing many examples (see Appendix X) of how a systemic school improvement approach builds teacher and leadership capacity in their schools.

Table 5.37 Building capacity for LLG schools

THEME	SCHOOL	RANK	AGGREGATED

		Order	Frequency
Teacher Capacity	R1B2	1	23
Collaboration	R2C2 R1B2	2	10
Leadership	R1G2 R2C2 R1B2	3	6
Coordinator Capacity	R1B2	4	5
Professional Learning	R2G2	5	4

Only one principal (from R1B2LLG) interviewed from the LLG schools named the theme of *Teacher Capacity* as the most significant example and that it was at the centre of a systemic school improvement approach. The principal saw teacher capacity as building the collective capacity of teachers because, if you improve teacher practice, you improve student learning. The emphasis on building teacher capacity mentioned examples of constantly urging teachers to open their minds to a changing world, focus on the way students learn and move with the times, especially with technology. *Collaboration* was the second most significant theme. Similar examples to HLG schools in Table 5.34 emerged. The third significant theme from all three principals related to *Leadership*, again similar to the finding in Table 5.34. The principals predominately cited examples of their own leadership and the development of coordinators in their schools. The notion of distributive or a shared leadership was evident in the examples, with Leadership Team members being responsible for key improvement areas of the school's strategic improvement plan. This was also a result in the document analysis discussed earlier in this chapter.

The final emerging themes from the analysis shown in Table 5.37 for capacity building in LLG schools focused on *Coordinator Capacity* and *Professional Learning*. The aggregated frequency of responses from the principals was of low significance compared to the other emerging themes.

Adaptability for sustainability analysis from the principal interview transcripts is shown in Table 5.38 for LLG schools, together with the most common emerging themes. The examples are shown in Appendix Y.

Table 5.38 Adaptability for sustainability for LLG schools

Theme	School	Rank Order	Aggregated Frequency
Data Decision Making	R1G2 R2C2 R1B2	1	19
Planning	R1G2	2	7

	R2C2 R1B2		
Culture	R1G2 R2C2 R1B2	3	6
Continuous Improvement	R1B2 R1B2	4	6

The principals interviewed from LLG schools named the theme of *Data decision making* as the most significant example of a systemic school improvement approach that informs adaptability for sustainability. All three principals from R1G2LLG, R2C2LLG, and R1B2LLG schools provided examples regarding data. Principals cited data as crucial in identifying areas for improvement. They also mentioned the need for professional development in how to use data to inform their teaching practice. Closely related to the theme of data, again all principals from R1G1LLG, R2C1LLG and R1B1LLG schools cited *Planning* as the second most significant response. This theme appeared to reflect a close connection between the system plan and the school strategic plan, noting the importance of monitoring plans for improvement informed by data. The third significant theme from the three principals related to *Culture*. The emphasis in the examples given by principals was focused on a learning culture where every child is enabled to achieve their potential.

The final emerging themes from the analysis shown in Table 5.38 for adaptability for sustainability in the LLG schools concentrated on *Continuous Improvement* and *Educational Change.* The aggregated frequency of responses from the principals was lower in significance compared to the other emerging themes.

The researcher determined given the volume of data collected and analysed it was best to summarise the results into a table. Table 5.39 shows a summary of the key emerging themes from the semi-structured interviews with principals from HLG and LLG schools.

Table 5.39 Summary HLG schools and LLG schools

	HLG Schools		LLG Schools	
Salient Dimension	**Theme**	**Frequency**	**Theme**	**Frequency**
Direction and Purpose	Vision/Mission	12	Alignment	12
	Moral Purpose	8	Moral Purpose	10
	Alignment	6	Goals	6
	Goals	4	Vision/Mission	3
	Priorities	2	Leadership	3
Capacity Building	Collaboration	15	Teacher Capacity	23
	Teacher Capacity	14	Collaboration	10

	Leadership	10	Leadership	6
	Professional Learning	9	Coordinator Capacity	5
	Coordinator Capacity	5	Professional Learning	4
Adaptability for Sustainability	Data Decision Making	11	Data Decision Making	19
	Continuous Improvement	7	Planning	7
	Collaboration	6	Continuous Improvement	6
	Planning	5	Culture	6
	Educational Change	4	Educational Change	4

The analysis of the transcript interviews for **Direction and Purpose** has shown a consistent level of understanding by principals of the emerging themes for both HLG and LLG schools. Similar themes have arisen as the most significant four in no particular order: *Vision/Mission*, *Moral Purpose*, *Alignment*, and *Goals*. However, HLG schools place more significance on Vision/Mission, Moral Purpose, and Alignment, whereas LLG schools place more significance on Alignment, Moral Purpose, and Goals. Two other emerging themes of lower significance from principals' perceptions were identified as *Priorities* and *Leadership*. The principals' transcripts were unanimous in their recognition and affirmation that a systemic school improvement approach provided school communities with direction and purpose.

The **Building Capacity** analysis of the transcript data for HLG and LLG schools spoke with confidence and at great length, resulting in five top themes emerging. In no particular order, the five themes for both HLG and LLG schools were: *Collaboration*, *Teacher Capacity*, *Leadership*, *Professional Learning*, and *Coordinator Capacity*. The synergy between the HLG and LLG schools appeared with the two top emerging themes of significance being *Collaboration* and *Teacher Capacity*. Both themes emerged prominently from the literature review in Chapter 2 (Section 2.4). Interestingly, the LLG schools frequently mentioned in their interviews the importance of building teacher capacity for improvement in student achievement. Nevertheless, all principals' transcripts were undivided in their acknowledgment and confirmation of the significance that a systemic school improvement approach provided to building capacity within their schools.

The analysis of the transcript data for **Adaptability and Sustainability** has shown some consistent levels of understanding by principals of the emerging themes for both HLG and LLG school; however, not as consistently strong as for Direction and Purpose or Capacity Building. The one consistent theme for both HLG and LLG schools identified as significant was the importance of *Data*. Other themes that were consistent across both HLG and LLG schools were *Planning*, *Continuous Improvement*, and *Educational Change*. Two of the

inconsistent themes that emerged were *Collaboration* and *Culture*. Interestingly, the LLG schools' principals cited the development of a culture, in particular, a learning culture. The principals' transcripts, while inconsistent with some emerging themes, generally affirmed that a systemic school improvement approach allowed school communities to adapt for sustainability in improving student achievement.

Table 5.40 shows both HLG and LLG schools aggregated frequency of the themes emerging from the principals' interviews for HLG and LLG schools to provide another understanding of the participants' perspectives for analysis.

Table 5.40 HLG and LLG aggregated frequencies

Salient Dimension	Theme	Aggregated Frequencies
Direction and Purpose	Moral Purpose	18
	Alignment	18
	Vision/Mission	15
	Goals	10
	Priorities	2
Capacity Building	Teacher Capacity	37
	Collaboration	31
	Leadership	19
	Professional Learning	13
	Coordinator Capacity	10
Adaptability for Sustainability	Data	30
	Continuous Improvement	13
	Planning	12
	Educational Change	8
	Culture	6

The analysis of the aggregated frequencies in Table 5.40 for HLG and LLG schools showed a synergy with **Capacity Building** with a prioritised commitment to the two strongest emerging themes being *Teacher Capacity* and *Collaboration***.** The next significant theme came from the salient dimension for **Adaptability for Sustainability** with the theme relating to *Data*, followed by the next salient dimension **Direction and Purpose** with the themes *Moral Purpose* and *Alignment* for both HLG and LLG schools being of equal significance.

In summary, the principals' semi-structured interview results from the HLG and LLG schools showed general consistency in the emerging themes for all schools. The six principals interviewed gave importance to key significant themes from the analysis of the transcripts, as identified in Table 5.38 and Table 5.39. In the analysis of the results, a systemic school improvement approach seemed to guide classroom teachers, school leadership, and system leadership in influencing student achievement. While there appears some significant consistency in the themes between HLG and LLG schools, this could be attributed to their

engagement with a systemic school improvement approach that guides the development of effective school structures, policies and practices. The question remains: why the different learning gains between schools when the six schools draw from broadly similar SES demographics?

The results from the semi-structured interviews with principals and their emerging perceptual themes have identified that systemic school improvement may be contributing to the impact on classroom teachers and school leadership and, finally, on the school learning culture and student achievement. The principal-perception results also suggest that a systemic school improvement approach works well in giving direction and purpose, building the capacity of classroom teachers and school leaders, and allowing for adaptability for sustainability.

5.4 Integration of Qualitative Data Results

This section explores similarities and differences between the results of the document analysis and those of the semi-structured interviews of principals. The integrated results from these research methods will contribute to understanding the strengths and weaknesses of HLG and LLG schools in the context of a systemic school improvement approach. This section may explain why different learning gains exist between schools when the six schools draw from broadly similar SES demographics which emerged from the previous section.

Newell and Simon (1972) recommended the use of converging operations in problem-solving. Understanding complex phenomena by integrating multiple perspectives increases the opportunity of developing deeper insights and revealing more accurate patterns in the data. Sections of this chapter have considered the impact of a systemic school improvement approach through the respective lenses of questionnaire qualitative data, school documentation, and semi-structured interviews with principals. In this section, the results of each dataset are compared to reveal consistencies and, hence, validation between datasets, and points of disjunction. The desirability (or otherwise) of consistency between a principal's perspective and the vision adumbrated in the school's formal plans and documents is discussed. Unfortunately, a limitation of this section of analysis is that it does not include the qualitative data from Part D of the questionnaire for HLG and LLG schools. The benefit of incorporating the HLG and LLG data was not realised until after the questionnaire was administered and the quantitative data analysis completed.

Essentially, this section aims to achieve two things. First, provide an insight into what schools are doing to implement a systemic school improvement approach, which was discussed earlier in this chapter. Second, establish what it is that HLG schools are doing that LLG schools are not, or vice versa, and the implications for policy and practice or further research.

5.4.1 Document analysis for HLG and LLG schools

Table 5.41 has been designed utilising tables 5.31 to 5.40, and shows a summary of the key emerging priorities from the documents supplied by HLG and LLG schools. The table shows the total number of years that each was a priority for the schools. As a result, Table 5.41 provides a comparison between HLG and LLG schools, and represents a key dataset for this chapter.

Table 5.41 Consistency analysis of school documents

Salient Dimension	Key Area	Component	Total Number of Years HLG	Total Number of Years LLG
Direction and Purpose	1. Catholic Life and Religious Education	1.1 Vision and mission	4	7
		1.2 Religious education	4	0
		1.3 Catholic life and culture	0	6
		Total	**8**	**13**
	2. Students and their Learning	2.1 Educational potential	5	5
		2.3 Reporting student progress and achievement	0	5
		2.4 E-learning	4	9
		2.5 Pastoral care and well-being	6	5
		Total	**15**	**24**
	3. Pedagogy	3.2 Diversity of learners	0	8
		3.3 Teaching practice	4	7
		3.4 Planning, programming, and evaluation	4	0
		3.5 Assessment	4	1
		Total	**12**	**16**
	4. Human Resources	4.2 Staff professional development	2	6
		Total	**2**	**6**
	5. Resources, Finances, Facilities	5.1 Resourcing of learning	3	7
		Total	**3**	**7**
Building Capacity	3. Pedagogy	3.3 Teaching practice	4	7
		3.5 Assessment	4	1
		Total	**8**	**8**
	4. Human Resources	4.2 Staff professional development	2	6
		4.4 Building leadership capacity	3	4
		Total	**5**	**10**
adaptability for sustainability		7.2 Culture of improvement and transformation	1	0
		Total	**5**	**7**
		Grand Total	**58**	**91**

In describing what these schools have in common, this section also describes what distinguishes HLG schools from LLG schools. In terms of consistencies and points of disagreement, it was clear that there was consistency in terms of the extent to which schools were adopting the documented key area priorities and their related components. A clear disparity was the number of components the schools had to adopt over the five-year cycle. Covering thirty-three components over five years meant that key area priorities that could be covered each year could not be addressed without considering the impact on the school with too many components in any one year. On the face of it, Table 5.41 suggests that the fewer the key area components that schools do, the better the student achievement. Over a five-year improvement cycle, HLG schools covered a grand total of fifty-eight key area components to LLG schools' ninety-one key area components. This result raises questions for

further research regarding which components to adopt on the improvement journey, and why.

Table 5.41 shows consistency between HLG and LLG schools in the targeted key area components of the salient dimension 'Direction and Purpose'. A priority for both HLG and LLG schools was the overall targeted key areas of 'Students and their Learning' and 'Pedagogy', even though the total number of years and the components varied. The other consistency lay in the salient dimension of 'Build Capacity', where 'Pedagogy' was the priority. These consistencies under consideration in this case study suggested that a systemic school improvement approach impacted on student achievement, and that moral purpose was at the centre of what HLG and LLG schools did. The document analysis indicated that schools were building a shared vision by establishing an overall sense of purpose, to which they were strongly committed. Consequently, the quality of teaching in HLG and LLG schools appeared to be the central theme of an improvement approach, in educating the development of the whole student. The foundation of a systemic school improvement approach to improve student achievement was the quality of teaching practice in the classroom, shown in Table 5.41 in the key area of 'Pedagogy'. This supported the literature discussed in Chapter 2, demonstrating skilled teachers matter as one of the critical factors in educating and influencing a student's achievement.

Table 5.41 illustrates differences in the documentation between HLG and LLG schools. What was significant was the high number of years spent by LLG schools on targeted key area components, which were not matched by the HLG schools. That is, LLG schools appeared to be targeting and allocating more time in total number of years to particular key areas or sustaining a focus on those areas for longer; HLG schools do not do this. This is illustrated in Table 5.41 with the components 'Vision and Mission', 'Reporting student progress and achievement', 'Diversity of learners', 'Teaching practice' and 'Staff professional development'. This assumption in this study was that HLG schools had disregarded the need to complete thirty-three components over five years. These key areas and components were the schools' self-determined priorities with the aim of improving student achievement. However, this was further complicated when considering that, given the grand total of component priorities over a number of years, the LLG schools' learning growth had not improved. This might suggest a tension between a system-driven school improvement approach, where LLG schools use of a bureaucratic approach could possibly narrow outcome

measures, and where a HLG school-driven approach, which concentrated on practice and creating a school learning culture in delivering a moral purpose, to best serve the students and teachers. This contrast between the documentation of HLG and LLG schools highlighted the notion of LLG schools being caught between a rock and a hard place in delivering contemporary school improvement, school system and national agenda, and that this could largely be politically driven for accountability reasons. The question of accountability was discussed in Chapter 1 (Section 1.1.1 System accountability) with its purpose being seen as either for internal or for external accountability (Fullan & Quinn, 2016). This raises the question: are schools accountable to themselves or accountable to a school system and/or government? The intention should be that a systemic school improvement approach enables schools to be empowered and find a balance between a top-down and bottom-up approach, which was discussed in Chapter 2, Literature Review.

5.4.2 Semi-structured Interviews for HLG and LLG Schools

Table 5.42 has been designed utilising Table 5.38 from earlier sections in this chapter, and shows a summary of the key emerging themes from the semi-structured interviews with principals of HLG and LLG schools. The table identifies frequency, frequency percentage, cumulative frequency percentage, and the total frequency of the emerging themes. The amended tables add a cumulative frequency column so that we can contrast more clearly what the HLG principals are targeting compared to the LLG principals. Table 5.42 provides a comparison between HLG and LLG schools and represents a key dataset for this chapter, providing better insights and revealing more accurate patterns in the data.

Table 5.42 Consistency analysis of principals' interviews

		HLG Schools			LLG Schools			
Salient Dimension	**Theme**	**Frequency (Expected Value)**	**Frequency %**	**Cumulative Frequency %**	**Frequency (Expected Value)**	**Frequency %**	**Cumulative Frequency %**	**Total Frequency**
Direction and Purpose	Vision/mission	12 (7.27)	37.5%	37.5%	3 (7.73)	8.8%	8.8%	15
	Moral purpose	8 (8.73)	25.0%	62.5%	10 (9.27)	29.4%	38.2%	18
	Alignment	6 (8.70)	18.7%	81.2%	12 (9.27)	35.3%	73.5%	18
	Goals	4 (4.85)	12.5%	93.7%	6 (5.15)	17.6%	91.8%	10
	Priorities	2 (0.97)	6.2%	100%	0	0	91.8%	2
	Leadership	0	0	100%	3 (1.55)	8.2%	99.9%	3
Column Totals		**32**			**34**			**66**
Building Capacity	Collaboration	15 (13.10)	28.3%	28.3%	10 (11.90)	20.8%	20.8%	25
	Teacher capacity	14 (19.40)	26.4%	54.7%	23 (17.60)	47.9%	68.7%	37
	Leadership	10 (8.40)	18.9%	73.6%	6 (7.60)	12.5%	81.2%	16
	Professional learning	9 (6.82)	17.0%	90.6%	4 (6.18)	8.3%	89.5%	13
	Coordinator capacity	5 (5.25)	9.4%	100.0%	5 (4.75)	10.4%	99.9%	10
Column Totals		**53**			**48**			**101**
Adaptability for Sustainability	Data Decision Making	11 (13.20)	33.3%	33.3%	19 (16.80)	45.2%	45.2%	30
	Continuous improvement	7 (5.71)	21.2%	54.5%	6 (7.28)	14.3%	59.5%	13
	Collaboration	6 (2.64)	18.2%	72.7%	0	0	59.5%	6
	Planning	5 (5.28)	15.1%	87.9%	7 (6.72)	16.7%	76.1%	12
	Educational change	4 (3.52)	12.1%	99.9%	4 (4.48)	9.5%	85.7%	8
	Culture	0	0	99.9%	6 (3.36)	14.3%	99.9%	6
Column Totals		**33**			**42**			**75**

In Table 5.42 **Direction and Purpose**, 37.5% of principals from HLG schools perceived *Vision/Mission* as important, compared to 8.8% from LLG schools. *Moral Purpose* showed a closer result of principals' perceptions for HLG and LLG schools—29.4% of LLG schools compared to 25.0% of HLG schools with a difference of 4.4%. However, there were disparities in the perception of *Alignment*, with principals of LLG schools putting a stronger emphasis on alignment, as compared to HLG schools. Further, principals perceived *Alignment* to be a major emphasis for LLG schools, at 35.3%, whereas *Vision/Mission* was the major focus for HLG schools, at 37.5%. The cumulative frequency for *Vision/Mission*, and

Moral Purpose comprise 62.5% of the principals' perceptions in HLG schools, while the same two comprise only 38.2% of the principals' perceptions for LLG schools. In comparison, principals in LLG schools spend 82.35% of their perceived time on *Moral Purpose*, *Alignment* and *Goals*. This result raises an implication for further research regarding LLG schools spending more perceived time on these three than do HLG schools and yet them not contributing to improving student learning gain. This is an implication for further research and may contribute to an LLG school longitudinal study.

Building Capacity (see Table 5.42) revealed an interesting difference between principals' perceptions, showing that in HLG schools there was an equal emphasis on *Collaboration* and *Teacher Capacity*, representing a cumulative frequency of 54.7%. However, in LLG schools, principals perceived the emphasis to be on *Teacher Capacity*, at 47.9%, compared with *Collaboration* at 20.8%; the two emerging themes represented 68.7% of principals' perceptions. Similarly, in HLG schools, *Leadership* and *Professional Learning* were closely represented at 18.9% and 17.0%, respectively, receiving 35.9% emphasis overall, while in LLG schools, these represented only 20.8%. *Coordinator Capacity* was similar for both HLG and LLG schools, at 9.4%, and 10.4%, respectively. In HLG schools, principals perceived there to be a balance across the four themes of *Collaboration, Teacher Capacity, Leadership, and Professional Learning*, at 90.6%, while in LLG schools, building *Teacher Capacity* represented 47.9%. This reflects the relative teacher capacity emphasis. Further, *Coordinator Capacity* at 10.4%, when coupled with *Teacher Capacity* at 47.9%, occupied the majority of the principals' perceptions for LLG schools (58.3%), compared with 26.4% in HLG schools. Themes such as *Collaboration, Leadership,* and *Professional Learning* were perceived lower in importance with principals in LLG schools. In HLG schools there was a consistency across perceptions of importance for the four themes of *Collaboration, Teacher Capacity, Leadership,* and *Professional Learning,* accounting for 90.6% of the principals' views. In LLG schools, these four themes accounted for 89.5% of the principals' views. This could imply that LLG schools' collective responsibility or collective capacity was considered of less importance or that principals had a more external focus of control, placing the responsibility for performance on teachers' individual capacity. What is clear is that there is a more even distribution of the principals' perceptions over the four themes in HLG schools than in LLG schools. Further, in LLG schools, building *Teacher Capacity* represented 47.9% of significance from principals' perceptions. Additionally, *Coordinator Capacity* at 10.4%, when coupled with teacher capacity at 47.9%, comprised the majority of the principals' perceptions in LLG

schools at 58.3%; principals in HLG and LLG schools perceived themes such as *Collaboration, Leadership And Professional Learning* differently.

In the literature review it was unequivocally determined that classroom teachers matter and make the biggest difference to student achievement. Table 5.42, in the salient dimension of Capacity Building, principals' perceptions focused on *Teacher Capacity* in HLG schools was at 18.9% as opposed to 47.9% in LLG schools, a discrepancy of 21.5% which is the most significant discrepancy in the salient dimension of Capacity Building between HLG and LLG schools and an implication for further research into what factors may be contributing to this result.

In Table 5.42, two themes occupy over 50% of the salient dimension **Adaptability for Sustainability**, for both HLG and LLG schools: *Data* at 33.3% for HLG and 45.2% for LLG, and *Continuous Improvement* at 21.2% for HLG and 14.2% for LLG. In HLG schools, cumulative frequency of these two themes was 54.5%, while in LLG schools it was 59.5%. In LLG schools, the frequency of the importance of *Data* was 45.2%, compared with only 33.3% for HLG schools. In both HLG and LLG schools, principals spent more perceived time on *Data* than on *Continuous Improvement*. Principals are perceived to spend more time on data than on continuous improved to ensure they make the correct decisions that inform school practices and improvement. The principals' interviews in LLG schools make no mention of *Collaboration*. This is similar to the low perception of the importance for collaboration under the Capacity Building dimension, compared with 18.2% in HLG schools. The principals' perceived amount of time spent on *Planning* in HLG schools was 15.1% and 16.7% in LLG schools, while on *Educational Change* it was 12.1% for HLG schools and 9.5% for LLG schools. As with the salient dimension Building Capacity, the key difference between the perceptions of principals from HLG and LLG schools lay in the themes *Data*, *Continuous Improvement*, *Collaboration*, *Planning*, and *Educational Change*, which suggests that, in HLG schools, the principals' perceptions of school improvement were more comprehensive and more inclusive of the key themes, as revealed in the literature review in Chapter 2 (Fullan, 2011; Hattie, 2015), such as building individual and collective capacity. On the other hand, in LLG schools, the principals' perceptions of school improvement appeared to adopt an approach of repeating themes until there was improvement.

In the literature review discussed in Chapter 2, the effective use of data was an important emerging sub-theme. Table 5.42 in the salient dimension of Adaptability for Sustainability,

principals' perceptions focused on *Data* in HLG schools at 33.3%, as opposed to 45.3% in LLG schools. This discrepancy of 11.9% between HLG and LLG schools was the most significant discrepancy of all themes within the salient dimension Adaptability for Sustainability and was an implication for further research into what factors may be contributing to this result.

The analysis of Table 5.42 highlighted the principals' perceptions from the notion of a school-owned improvement approach. The principals' perceptions from HLG schools reflected their wish to create a culture in their schools that was purpose-driven by vision and mission, that focused on building teacher capacity via collaboration, and that was strongly informed by data. The principals' perceptions from LLG schools were driven by alignment with school system priorities, suggesting compliance rather than a vision, with a focus on building teacher capacity strongly guided by data. This analysis highlighted the challenge of mediating the system-driven and school-driven improvement tensions. Regardless of the type of school, the principals' perceptions suggested that a systemic school improvement approach empowered principals to lead improvement by determining key school priorities and providing schools with a practical and strategic way forward. One recommendation might be related to the development of principal capacity to determine how they are empowered.

The literature review discussed in Chapter 2 revealed significant emerging sub-themes to this study, which were identified as Vision and Mission, Moral Purpose, Teacher Capacity, Collaborative Practices, and Use of Effective Data. The consistency analysis of principals' interviews (Table 5.42) in the salient dimension of Direction and Purpose, Building Capacity and Adaptability for Sustainability and the aggregated principals' views in both HLG and LLG schools identified similar emerging themes as being significant for a systemic school improvement approach having a perceived influence on student achievement.

5.4.3 Comparison of school document analysis and principal interviews

In comparing the document analysis and semi-structured interviews for the HLG and LLG schools, there were obvious consistencies. These consistencies between the schools were expressed in terms of the theme of Moral Purpose, which was centred on the student and their learning, with a priority on building the collective capacity of school leadership teams and classroom teachers. Results from both qualitative methods, for both HLG and LLG schools, suggest that there was a focus on strategic priorities that addressed the school context through local perspectives initially, but also the wider agendas of the school system

and governments. This supported the notion that any systemic school improvement approach should empower principals to lead improvement and be responsible for data-driven decision-making at the school level. The effective use of data to drive the direction for facilitating improvements in student learning and classroom teaching was consistently identified in the results of both the document analysis and semi-structured interviews.

The results from the document analysis and semi-structured interviews also highlighted the inconsistences. The HLG and LLG schools were viewed by the researcher to be on a different school improvement journey or at different starting points on their improvement progression. The results suggest that HLG and LLG schools may permit a number of different priorities in attempting to move from one particular performance level to the next. For example, in moving to better student achievement and school performance, the results suggest that LLG schools may permit a focus on shaping teaching practice, with a particular focus on building individual and collective capacity through collaboration practices, staff professional development, and professional learning. The results suggest that LLG schools cannot continue to improve by simply attempting to address more of the same priorities year after year or focusing disproportionately on teacher capacity. This implies what Stoll and Fink (1998) and Gonski et al. (2018) would call 'cruising schools' where they appear to be effective based on accepted measures and achieving student learning outcomes above minimum standards, but delivering lower rates of learning growth.

The HLG schools that may be further along a school improvement journey may see their priority being sustained improvement by balancing system and school priorities. They may decide to permit changing their priorities as the needs of students change, and as student achievement varies. While this study shows that LLG schools hope to achieve improvement through a focus on students and their learning, as well as through teaching practice, such an approach may not necessarily work for the HLG schools. Rather, HLG schools may contribute to sustain improvement by empowering and increasing the responsibilities and flexibilities of classroom teachers. This will enable them to shape their teaching practice, and decentralise their pedagogical privileges to the classroom through building their teacher capacity and encouraging collaboration. Therefore, in HLG schools, collaborative practice may be the priority for improving teaching practice and making classroom teachers accountable to each other. It is about building collective efficacy.

The results suggest that HLG and LLG schools appear to be on different school improvement journeys and may benefit from learning from those schools at a similar stage of their improvement journey and from those schools that are at a significantly different level of performance. If collaborative practices are one of the high priorities for both HLG and LLG schools, principals might consider making teaching practice public between teachers both within and across schools. Given the different results for HLG and LLG schools, there was little or no evidence of a 'one size fits all' approach in terms of a systemic school improvement approach. This discrepancy between HLG and LLG schools implies a need for further research into what are the advantages and disadvantages of the notion of a 'one size fits all' approach and whether it is contributing to this result.

In summary, this section has highlighted the challenge for principals and schools in mediating the tension between system-driven and school-driven school improvement. A systemic school improvement approach has a series of requirements, priorities, and strategies that in turn influence the school. At the same time, schools have strategic and annual improvement agendas that vary according to the context and stage of their school improvement journey, and require attention to be paid to the school system and national agendas. There was evidence of the classic top-down and bottom-up dilemma discussed in Chapter 2. Principals with delegated responsibilities were ideally placed to mediate these top-down and bottom-up pressures, to balance these pressures, and to align the various school initiatives so that the focus remained squarely on improving school performance and student achievement. In both HLG and LLG schools, leadership continuity, as was shown in the questionnaire findings and basic demographic data in Chapter 5, may contribute not only to sparking school improvement, but also to sustaining it.

Consequently, it is critical that the role of principal not be regarded as just another bureaucratic layer in a school system. In the literature review on building capacity, 'building principal capacity' was an emerging sub-theme for this study and was identified as the second most important factor (after building the capacity of the classroom teacher) to impact on student achievement. The principal has been identified in this study as the person with the role of helping self and staff, both individually and collectively. This is a complex role and in dealing with the complexities of the role and in modelling effective leadership, principals are required to be committed to building their own individual capabilities through ongoing professional learning and by seeking opportunities for professional growth. This

chapter has identified that the role of the principal as an instructional leader is an important individual capability.

The results suggest that by requiring the development of others collectively, principals must perform a leadership role based on relational trust. They must build a collegial and collaborative culture of credibility to assist classroom teachers and their school leadership team to make improvements within a broader aligned system. The HLG schools in the study appeared to do this through a shared vision rather than by using a compliance focus. A systemic school improvement approach directs a clear theory of action that explains the alignment from a principal's position to student achievement. The principals from both HLG and LLG schools interviewed for the study attempted to be explicit in their strategic documentation. This assisted in keeping everything 'in sync'. The results from the interviews of principals showed that their perception of leadership and their workload dealing with the competing expectations of school, system, and government (state and national) agendas sometime made being explicit challenging. The aim of a systemic school improvement approach was not to implement top-down control, but to provide principals with a framework for building the capacity of the classroom teachers and for the school leadership teams to adapt to changing agendas to implement improvement practices effectively, remembering that improvement in authentic learning was a priority for everyone in the school system.

Principals' perceptions indicated that any systemic school improvement approach had to build a culture of empowerment. There was a clear understanding, shown in Table 5.42, regarding capacity building. Classroom teachers in schools needed to be empowered to improve the school. This principle of empowerment reinforced the role of a systemic school improvement approach in building the capacity of school leadership and classroom teachers so that they are better equipped to drive improvement in their schools. The research (Balkar, 2015) indicates that empowerment occurs when leaders have a sense of confidence, a sense of involvement, a sense of engagement, and can impact on something important.

An implication for policy and practice and for further research is to examine HLG and LLG schools—through a longitudinal study, as well as a cross-sectional study with other school systems— to identify at what point their paths diverge. A question for further research is: how do you measure systemic school improvement empowerment?

A systemic school improvement approach should not be seen as a top-down, bottom-up approach or as a pull-push approach (Arnett et al., 2018), but rather as a complex adaptive approach; an approach that emphasises student learning, intervention, and empowerment, and gives schools a degree of independence, while being interdependent on others that belong to the school system. The results in this chapter have highlighted a systemic school improvement approach through which principals can address school needs and enable school leadership teams to exert more influence and direction towards authentic school improvement, depending on where they are on the journey.

Chapter 6 will discuss the analysis of these results.

CHAPTER 6

DISCUSSION OF RESULTS

6.0 Introduction

In this chapter, the results reported in Chapter 5 are discussed, guided by the four research questions. The discussion is based on three themes from the literature review: direction and purpose; building capacity; and adaptability for sustainability. Towards the final section of the chapter, the discussion focuses on how principals of HLG and LLG schools perceive a school system influencing student achievement. The results in relation to what does and does not work well in school-system improvement is also discussed in this chapter.

Finally, an alternative conceptual framework for a systemic school improvement that promotes a systematic approach at all levels of a school system is introduced. The conceptual framework will provide an understanding of the interactions between the classroom, the school, and the school system and explore the notion of a complex adaptive school system approach to school improvement.

6.1 Discussion of Results

6.1.1 Systemic school improvement awareness, usefulness, and effectiveness perceptions

The first research question was:

> **How do principals, assistant principals, coordinators, and classroom teachers perceive the awareness, usefulness, and effectiveness of a systemic school improvement approach?**

The data forming the basis of this discussion of results are the participants' perceptions identified through endorsement proportions (Dorman, 1998) from the questionnaire (Chapter 5 Part B) with the results shown for awareness (Table 5.4), usefulness (Table 5.5) and effectiveness (Table 5.6). Endorsement proportions are simply the percentages of the population sample choosing each response.

The findings from the document analysis (Section 5.3.2) and semi-structured interviews (Section 5.3.3) contribute to the discussion of the results. The discussion includes participants' perceptions of the five school system mandated improvement practices:

Strategic Improvement Plan, Annual Improvement Plan, Annual Evaluations, School's Annual Reporting to the Community, and Cyclic Review.

The first endorsement proportion (Dorman, 1998) of the questionnaire (Chapter 5 Part B) concentrated on identifying the **awareness** of a systemic school improvement approach. The results (Table 5.4) showed that principals, assistant principals, coordinators, and classroom teachers had a high degree of awareness of the school systemic school improvement practices, with Annual Improvement Plans being most recognised. School systems recognise that any school improvement involves planning, especially for any proposed change, and anticipation of problems identified from school system data before any change is introduced (Harris, 2002).

The second endorsement proportion of the questionnaire (Chapter 5 Part B) concentrated on identifying **usefulness.** Participants were asked to indicate to what extent school staff had used the five practices of the school system improvement approach. The results (Table 5.5) showed that principals, assistant principals, coordinators, and classroom teachers perceived that the Annual Improvement Plan had highest use in their school because it outlined the key priorities, strategies, key responsibilities, and resourcing, and the planned targeted interventions to sustain or improve student achievement. The Annual Improvement Plan acts as an operation's plan for schools. This correlates with the awareness results in Chapter 5 and endorses that school systems need to plan for improvement (Downey et al., 2008; Mooney & Muasbach, 2008) to ensure coordination across every level of the school system.

The third endorsement proportion of the questionnaire (Chapter 5 Part B) focused on identifying **effectiveness**. Participants were asked to indicate to what extent they considered the five practices effective. Similar to the awareness and usefulness, the results (Table 5.6) showed that collectively principals, assistant principals, coordinators, and classroom teachers agreed that the practice with the highest endorsement proportion was again Annual Improvement Planning. The school's Annual Improvement Plan was linked to the metropolitan Catholic School system's Strategic Priorities, and its Annual Improvement Plans were monitored for their effectiveness by the regions through their regional consultant and provided targeted support to schools by the school system as required.

The document analysis and semi-structured interview results were consistent with the endorsement proportion for the questionnaire results (Chapter 5 Part B) for awareness,

usefulness, and effectiveness. The document analysis results indicated that in both HLG and LLG schools, awareness, usefulness, and effectiveness of systemic school improvement were evident in their annual planning documents. Both HLG and LLG schools were aware of their school improvement journey and knew where they were positioned; however, there was no sense in the strategic and annual planning documentation of where HLG and LLG schools wanted to be in the years ahead with student achievement. The semi-structured interview results (Table 5.39, p.162) also identified annual improvement planning as highly significant and valued in LLG schools because there was a need to have all classroom teachers and the school leadership team understand the desire to improve student achievement. The documents and interviews showed that HLG and LLG schools monitored improvements and internal reflected annually upon what had been learned to assist in the planning for the next year's priorities that were then reported annually to the school community and public. While school systems emphasise the need to plan for improvement, the awareness, usefulness, and effectiveness results for strategic improvement planning for both HLG and LLG schools were perceived of less importance than annual improvement planning. The strategic planning in this metropolitan Catholic system study was in five-year cycles, which the literature suggests is a typical planning period (Steiner, 2010). However, Steiner (2010) advocated that in particularly rapid periods of educational change, a strategic planning horizon of three to four years might be more appropriate. These planning periods may need further research and may contribute to implications for policy and practice. The study findings suggest that a shorter period for strategic planning would be preferable as a guide to systemic school improvement.

The international and national contexts described in Chapter 1 and the literature review in Chapter 2 named case studies of high-performing school systems—i.e. ones with a focus on awareness, usefulness and effectiveness of best practice in systemic school improvement—that many governments and school systems have introduced to sustain or improve levels of student achievement. McKinsey reports (Barber & Mourshed, 2007; Mourshed et al., 2010) have reported that the top five countries to introduce a systemic school improvement approach are Korea, Finland, Hong Kong, Singapore, and Canada, while other countries have not improved their student achievement. Other studies in England from the late 1990s (Fullan et al., 2004; Hopkins, 2017; K. Leithwood et al., 2004), the USA (Hopkins et al., 2011), Wales (Hopkins, 2017), and Scotland (Her Majesty Inspectorate of Education, 2006) have shown why some of the internationally high-performing school systems perform better than

others and why some system improvement strategies succeed, while others do not. Successful school systems exhibit strategies that provide targeted intervention, tailor the intervention to the different school contexts, and sustain improvement through pedagogical practices and the impact of leadership to ignite school improvement (Mourshed et al., 2010). In Australia, most government and non-government school systems have a school improvement approach to guide such efforts. It is becoming increasingly obvious from the literature and the findings of this study that there is no universal approach by school systems to generate and sustain school improvement. However, there are useful drivers to generate school improvement, as shown in the Chapter 5 results for HGL and LLG schools, and these will depend on the context in which the improvement takes place. The literature and results show that context can influence student achievement and can vary widely from school to school and from school system to school system. Therefore, a school system contextualisation can help determine what interventions can be made to sustain or improve student achievement. The challenge for the school system is to either mandate or encourage any targeted intervention to support schools in sustaining or improving student achievement.

To sum up the results in response to the first research question, there are three findings:

i. For the schools studied, attempts at school improvement had validated the awareness, usefulness, and effectiveness of mandated practices by principals, assistant principals, coordinators, and classroom teachers.

ii. Schools studied recognised that any school improvement involved planning, and principals, assistant principals, coordinators, and classroom teachers collectively preferred annual improvement planning, rather than strategic planning, as a significant influential practice that influenced student achievement. The implication of this result is that schools have a preference for a shorter time for planning, and annual planning is more explicit in driving the operations of school improvement.

iii. A systemic approach to school improvement was influenced by the school and/or school system context and that largely determined the targeted intervention that took place.

6.1.2 A school system improvement providing direction and purpose, building capacity, and adaptability for sustainability

The second research question:

> **How do principals, assistant principals, coordinators, and classroom teachers perceive a systemic school improvement approach providing direction and purpose, building capacity, and adapting for sustainable improvement?**

The results are discussed in three parts reflecting the three provisions targeted in the question. The results forming the basis for this discussion were participants' responses from the questionnaire (Chapter 5 Part C). The questionnaire results are shown for Direction and Purpose in Appendix E, Building Capacity in Appendix F and Appendix G, and Adaptability for Sustainability in Appendix J to Appendix L. The document analysis and semi-structured interview results also contributed to the discussion of this research sub-question.

6.1.2.1 Direction and Purpose

The results from the questionnaire items (Appendix E) on **Direction and Purpose** showed that a school system approach to school improvement gives direction and purpose by placing student achievement at the centre of systemic endeavours and evangelising their faith within a Catholic-based belief system. This result was consistent with the literature on vision, mission, and moral purpose (Barber & Fullan, 2005; Bezzina, 2010; A. Hargreaves & Shirley, 2009; Hopkins, 2013; Hopkins & Higham, 2007), emphasising the importance of a belief system for all classroom teachers' and school leaders' work. The document analysis results were consistent with the questionnaire results, showing that HLG and LLG schools consistently had a strong sense of a belief system in faith and learning, with a focus on what mattered most in mapping a pathway for improving or sustaining student achievement. The document analysis results pointed to a school system culture with high expectations, underpinned by a set of shared beliefs and values driving the faith-based belief system. This is consistent with the literature where high expectations were linked with higher performance for all students (CESE, 2014b) and where they were labelled as "shared whole-school vision and goals" (Cuttance, 2003) or, more importantly, responding to wider "community values" (Andrews & Lewis, 2004). The metropolitan Catholic school system, the subject of this study, cultivated a belief system with a Catholic identity that included a set of agreed outcomes that led to influencing student achievement. The school document results also showed that a school system that emphasised a strong understanding of what was

valued and demonstrated planning that was well-structured with a collaborative approach drove the improvement, as shown in both HLG and LLG schools.

The transcript interview results (Table 5.39, p. 162) for Direction and Purpose confirmed a level of understanding by principals on the emerging themes for both HLG and LLG schools. Hence, similar themes arose as the most significant four: Vision and Mission, Moral Purpose, Alignment, and Goals. The vision and mission thinking of any school system was important in ensuring a unity of purpose because "without systems thinking, the seed of vision falls on harsh soil" (Senge, 2006, p. 12). However, the principle of mission integrity challenged system thinking to ensure that at all levels—the classroom, the school, and the system—practised what was valued and did not reside at only one level (G. Grace, 2008). The principal perceptions from the semi-structured interviews recognised and affirmed that a systemic school improvement approach provided school communities with direction and purpose and a belief system that was a powerful blueprint for systemic school improvement.

In conclusion, this discussion of the results on **Direction and Purpose**, in response to the second research sub-question highlighted four findings:

i. A systemic school improvement approach provided direction and purpose.
ii. A systemic belief system has an influence on student achievement.
iii. Direction and purpose shaped by a school system's belief system must have integrity across the school system.
iv. A systemic belief system was a powerful blueprint that could unlock educational change for school improvement.

6.1.2.2 Building Capacity

The questionnaire item results (Appendices F to J) on **Building Capacity** showed that principals, assistant principals, coordinators, and classroom teachers perceived that a systemic school improvement approach helped build capacity in two ways: individually and collectively. The results are discussed in two parts. The first part discusses the results on building individual capacity; the second part discusses building collective capacity. The results forming the basis for this discussion were participants' responses from the questionnaire (Chapter 5 Part C). The questionnaire results are shown for building individual capacity in 'Build Principal Capacity' in Table 5.8 and 'Build Teacher Capacity' in Table 5.9. The questionnaire results for building collective capacity are shown in 'Collaborative Practices' in Table 5.10 and 'System Leadership' in Table 5.11. The document analysis and

semi-structured interview results also contributed to the discussion of this research sub-question.

The results on Building Capacity were consistent with the literature foreshadowed in Chapter 2 that if a school system builds capacity it not only is an important driver for school improvement but is also important in developing leadership for the future (Fullan et al., 2005; Levin, 2012). The literature on school system best practice (Barber & Mourshed, 2007; Jensen, 2012; Mourshed et al., 2010; Schleicher, 2018) and living-systems literature (Jansen et al., 2011; M. Wheatley, 1999; Wheatley, 2011) contributes to the understanding of building capacity at the individual and collective levels. In both cases, a school system that builds individual and collective capacity confirms that effective leadership is central to successful school improvement (CESE, 2014a).

The questionnaire findings (Chapter 5) confirmed that a school system was perceived to help build capacity within schools towards influencing student achievement in two ways. First, building individual capacity was associated with building principal and teacher capacities in four key capabilities:

i. enabling collaborative practices among staff (Table 5.10);
ii. concentrating on effective use of data as feedback for improvement (Table 5.12);
iii. ongoing and sustainable planning for improvement (Table 5.13); and finally,
iv. monitoring progress for continuous improvement (Table 5.14).

The document analysis results for Building Capacity for both HLG and LLG schools validated the questionnaire results (Chapter 5), whereby continuous school improvement depended on the classroom teacher and school leaders learning how to improve. This was evident in the annual improvement planning documentation, which highlighted the importance of building a well-structured school improvement plan. Such plans were constructed through a collaborative approach that not only enabled self-reflection time on what had been learned, but also time with the school consultant reviewing annual planning as system-mandated accountability. Evidence in the school documents suggested that school systems had aimed to build collaborative practice opportunities to nurture a culture of learning and engagement in faculty and staff meetings, including school professional learning days. These opportunities allowed classroom teachers, coordinators, and school leaders to co-learn, mentor or coach, by enabling meaningful conversations focused on the improvement of teacher practice. This supported the Harris (2010) argument that building capacity required

new ways of thinking, connecting, and working, and indeed "new ways of being" (Harris, 2010, p. 198). Documents on school planning showed there were opportunities for collaboration across the school, but they also highlighted the need for school leaders to have good team-building skills (individual capacity) that enabled teachers to build trusting relationships and have the capacity to work together collaboratively (collective capacity). The school documents confirmed the importance of a school system that encouraged distributed leadership among the school leadership team in supporting the principal to deliver school improvement. However, the notion of building distributive leadership capacity suggested extending it further to coordinators and classroom teachers as instructional leaders through a model of shared leadership. A school system distributive and/or a shared leadership approach reflected a complex adaptive system approach, as discussed in the literature (Chapter 2, Section 2.2.2). This approach allowed building the individual capacity of classroom teachers and coordinators, thus permitting principals to focus on their instructional leadership and not on operational matters that could consume too much of their time (Chapter 5, Section 5.2.4.2). Robinson (2017) and Robinson et al. (2008) posited the idea of a principal's leadership focusing substantially on instructional leadership as a priority if all student achievement was to be improved and sustained in the future. The literature also confirmed the importance of how principals could engage classroom teachers and lead improvement through such foundational practices as mentoring and coaching (Robinson, 2017).

The results from the HLG and LLG school principal interviews revealed five emerging themes related to building capacity. The five themes were: Collaboration; Teacher Capacity; Leadership; Professional Learning; and Coordinator Capacity.

The synergy between the HLG and LLG schools appeared with two of the emerging themes of most significance being Collaboration and Teacher Capacity. Both themes were consistent with the literature (Chapter 2) in being seen as enabling action focused on deep and sustained learning for all, with the intention of developing an adaptable and sustainable culture of learning within the school system (Fullan, 2004; A. Hargreaves & Fink, 2006). Interestingly, the LLG school principals' interview results referred frequently to the importance of building explicit teacher practice for improvement in student achievement, whereas in the HLG schools, principals referred frequently to collaboration. This may hint at school systems allowing schools to be at different performance levels in their improvement

journey— therefore, requiring different strategies and targeted interventions to influence student achievement. This is consistent with the study *How the world's most improved school systems keep getting better* (Mourshed et al., 2010). Nevertheless, all principals' perceptions were unanimous in their acknowledgement and confirmation of the significance of a school system enabling schools to build capacity within the school.

Finally, this discussion on **Building Capacity** comes in response to the second research question, and delivered five findings:

i. Principals, assistant principals, coordinators, and classroom teachers collectively agreed that a school system might contribute to building capacity in their school by encouraging collaborative practices.
ii. Principals, assistant principals, coordinators, and classroom teachers recognised the significance of building capacity individually and collectively.
iii. Building capacity was shaped by a school system creating opportunities for new ways of thinking, connecting and working within and across the school system.
iv. The school improvement strategies between HLG and LLG schools varied between a focus on collaboration and building on explicit teacher practice.
v. A school system that enables collaborative practices provides a powerful driver that could create positive outcomes in school improvement.

6.1.2.3 Adaptability for Sustainability

The findings from the questionnaire items (Appendix K to Appendix L) on **Adaptability for Sustainability** showed that the responses of principals, assistant principals, coordinators, and classroom teachers agreed strongly that a school system provided Adaptability for Sustainability, which could influence student achievement. This was consistent with the literature and the idea that organisations could be viewed as complex living systems with the ability to adapt in response to uncertainty, complexity, and ambiguity (M. Wheatley, 2006; Wheatley & Frieze, 2006). A living-systems perspective provides some guidance on practices that enhance self-organising and emergence patterns in organisations. Self-organising behaviour is common in the natural world where it is characterised by collective behaviour that self-organises in a dynamic manner to changing conditions, which leads to emergent patterns of behaviour (Jansen et al., 2011). This collective behaviour is consistent with the results in Chapter 5 that a school system that enables distributive and shared leadership builds capacity.

The questionnaire results (Chapter 5, Table 5.12) indicated a strong agreement that a school system's effective use of data overall supported, challenged, and informed Adaptability for Sustainability. The results showed that effective use of data is well-embedded in schools and informs teaching practice and student achievement. In addition, the results (Table 5.13) showed that a critical role of a school system was to provide a model for strategic planning and a map for school annual improvement. There was a reasonable level of agreement that a school system that encouraged planning also provided opportunities for targeted intervention and professional reflection on practice. This result is consistent with the literature that school systems have the potential to enable self-organisation to discover shared beliefs, clarify their intent and strengthen their connections. This enabling practice allows school systems to adapt to change and develop flexible and resilient plans to monitor for sustainability using data. The literature (Chapter 2) on school system best practices on educational change highlights the importance of using data effectively to adapt to uncertainty, complexity, and ambiguity and over time become sustainable in influencing student achievement (Jensen, 2012), which is also consistent with this study's results. This also corresponds with the Gonski report (Gonski et al., 2018) recommendation that using a growing body of data and research makes it possible to identify school improvement practices that have been shown to be effective.

The results from the document analysis and the semi-structured interviews in Chapter 5 point to three significant items that allowed a school system to be adaptable and sustainable. First, a school system allows schools to pinpoint areas of improvement; second, it provides a set of practices to monitor improvement; and third, it uses school system improvement as a means for school accountability for student achievement. The high level of agreement for these items (5 of the 6 principals) advocated that these three practices were priorities within HLG and LLG schools. The three items supported the notion of monitoring for continuous improvement by annual internal self-review and school system external reviews within a school improvement cycle of five years, which were complementary to each other. There was agreement among the principals that alignment and coherence were important in monitoring school improvement and for being adaptable and providing sustainability into the future. The notion of alignment and coherence through focusing on direction, cultivating collaborative cultures, deepening learning, securing accountability, and leading coherence is well documented in the literature (Fullan & Quinn, 2016; Jefferson & Anderson, 2017).

To conclude **Adaptability for Sustainability**, four findings were made:

i. Principals, assistant principals, coordinators, and classroom teachers agreed strongly that school systems enabled Adaptability for Sustainability, which in turn influenced student achievement.

ii. Principals, assistant principals, coordinators, and classroom teachers agreed strongly that a school system's effective use of data overall informed systemic school improvement and the need for adaptability and sustainability.

iii. There was a reasonable level of agreement that a school system that enabled planning for improvement provided opportunities for targeted intervention and professional reflection on practice, which provided a level of monitoring and engagement.

iv. There was agreement that if a school system constructed alignment and built coherence, these would be significant in monitoring school improvement and allowing for Adaptability for Sustainability into the future.

6.1.3 HLG and LLG schools and school system improvement

The third research question was:

> **How have HLG and LLG schools adopted a systemic school improvement approach?**

The data forming the foundation of the following discussion were based on the results of the document analysis and semi-structured interviews, which have been integrated to show how the HLG and LLG schools contribute to the discussion of this research sub-question.

The integrated results from the document analysis and semi-structured interviews demonstrated that HLG and LLG schools might have contributed to an understanding of being at two different performance levels of a school improvement journey. The results in the study showed that the HLG and LLG schools focused on a number of different priorities in attempting to move from one particular performance level to the next. For example, in moving to a better student achievement and school performance level, the results suggested that LLG schools might contribute more time to teaching practice, with a particular focus on building individual and collective capacity through collaboration practices and staff professional learning. The results advocated that LLG schools could not continue to improve by simply attempting to address more of the same priorities year after year if there was no impact on student achievement. This could be viewed as 'cruising schools' which was

mentioned in Chapter 5. It could also be said from a school system's perspective and, in line with Snowden and Boone (2007) that the uniqueness of the school system cautions us not to simply 'import' HLG practices into LLG schools and expect them to work. Their success would depend on the school context—that is, school type (single sex or coeducational), school size, student demographics (e.g. number of students with diverse learning needs, from English-as-a-second-language backgrounds, literacy and numeracy competency), as well as qualifications and experience of classroom teachers, and quality of school leadership.

The metropolitan Catholic school system recognised that HLG schools appeared to be at different performance levels in their school improvement journey. This may have been contributing to their priority of sustaining improvement by balancing and changing their priorities as the needs of students changed and as student achievement varied. The results suggested that any variation in priorities was based on data-informed evidence. While this study presented that LLG schools hoped to achieve improvement through a focus on students and their learning, as well as through explicit teaching practice that may be mandated with particular targeted interventions, such an approach did not necessarily work for the HLG schools. Rather, HLG schools seemed to sustain improvement by empowering and increasing the responsibilities and flexibility of classroom teachers, so as to shape their teaching practice, and by de-privatising their classroom pedagogical practices through building teacher capacity, encouraging peer collaboration, and sharing innovation. Therefore, the results suggested that in HLG schools, collaborative practice became the priority for improving teaching practice and making teachers accountable to each other. The results of this study are consistent with international high-performing school system studies (Barber & Mourshed, 2007; Hopkins, 2013; Mourshed et al., 2010; Schleicher, 2018), which indicate that school improvement is a system thing, not a single thing that starts at different performance levels and depends on the system-targeted intervention on offer at the different level of school performance.

Since the study results in Chapter 5 for HLG and LLG schools showed that a school system recognised that schools were at different performance levels of school improvement journeys, schools could benefit from learning from those at a similar performance level on that journey and from those that are at a significantly different level of performance. If collaborative practices are a high priority for a school system with HLG schools, principals should place an emphasis on making teaching practices public by finding ways to spread and

share information and practices between teachers both within and across the school system (Goss, 2015). Each school's improvement journey in this study was unique and constantly changing, which is consistent with the literature, suggesting that there are a number of preconditions that appear to enable or facilitate the development of school improvement. In the area of human and social capital (Caldwell & Harris, 2008; Stoll & Louis, 2007), there is a need for a school system to allow openness to improvement, trust and respect, access to expertise, and to be supportive of leadership and socialisation. There are practical implications for school systems in developing this human and social capital—for example, times and places to meet and hold discussions, as well as interdependent teacher roles, communication structures, teacher empowerment and social autonomy and, in the current metropolitan Catholic school system, the impact of industrial work practice agreements.

In the integrated results from the document analysis and semi-structured interviews for HLG and LLG schools, there was little or no evidence of a 'one size fits all' school system approach in terms of school improvement. The literature acknowledges the growing recognition in the field of school improvement that 'one size does not fit all' due to the complexity and different contexts of schools and systems, which necessitate different ways to embrace school improvement (D. Hargreaves, 2003). Historically, governments have had a preference for a 'one size fits all' school system approach, which, in essence, is a top-down approach (Barber, 2009). However, a top-down improvement approach can lack ownership, overemphasise external research, and not recognise the practitioners in the schools (Bishop & Mulford, 1999). Overdoing top-down control can stifle creativity and innovation. At the same time, overemphasising a school bottom-up approach can lead to chaos. Both are likely to be counterproductive to any school improvement (Fullan, 1993). While there was evidence in the discussion of questionnaire results in Chapter 5 that a top-down approach with systemic school improvement did not allow for creativity and innovation, any bottom-up approach by schools did not lead to chaos in their school improvement journey.

In considering a 'one size fits all' approach, Sergiovanni (1996) argued that neither top-down strategies nor bottom-up strategies have worked well. However, there is research that does not advise a withdrawal of the traditional top-down approach but advocates instead for a re-balance of a top-down approach and a bottom-up approach (Hopkins & Higham, 2007).

The quest for the right balance between a school system top-down and a school bottom-up improvement approach has given rise to a greater appreciation of complexity (Snowden &

Boone, 2007) within school systems. As discussed in the literature (Chapter 2), complexity thinking is concerned with non-linear and dynamic behaviour where the behaviours of individuals may affect related individuals but will not necessarily have an equal or uniform impact (M. Wheatley, 1999). The key principles of complexity require connectivity and interdependence, which enable collaboration through engagement that works between the classroom, the school, and the school system.

To conclude on how schools have adopted a systemic school improvement approach, four deductions can be drawn. The school system with HLG and LLG schools:

i. Suggested that schools were all on an improvement journey that was constantly changing, as with complex adaptive systems.
ii. Allowed HLG and LLG schools on their improvement journey to have different improvement priorities, strategies, and system-targeted interventions to sustain or improve student achievement.
iii. Proposed that a systemic school improvement approach was not a 'one size fits all' proposition.
iv. Recognised that schools were at different performance levels in their improvement journey and the best-targeted intervention was determined by the school context and data-evidence driven.

6.1.4 HLG and LLG schools' perception of school system improvement influencing student achievement

The fourth and final research question of this case study is:

> **How do principals of HLG and LLG schools perceive the systemic school improvement approach influencing student achievement?**

The results forming the basis of the following discussion come from the semi-structured interviews, which have been integrated to show how HLG and LLG school principals' perceptions contributed to the discussion of this research question.

A school system should be "moving from the doer to the enabler" wherever possible (Sharratt & Fullan, 2009, p. 46). This is consistent with the converged results from the document analysis and semi-structured interviews showing that in a school system with both HLG and LLG schools, the principal led and drove a school system improvement approach. The principals' perceptions from the semi-structured interviews indicated that they were

ideally placed to mediate any school system top-down and school bottom-up pressures that may occur with a systemic school improvement, and rebalance these pressures and align school priorities within their context such that the focus remained on sustaining or improving student achievement. Consequently, it was critical that, in a school system, the role of principal was not regarded as just another bureaucratic layer. In the literature, building principal capacity was a theme identified as the second most important factor, after building the capacity of the classroom teacher, to impact on student achievement (Dinham, 2008, 2016; Hattie, 2012; Robinson et al., 2008). The role of principal was to build their own capacity and to build capacity in others, individually and collectively. The Australian Leadership Standards (AITSL, 2011, 2014) recognise principals' deal with the complexities of the role and need to model effective leadership. They are required to be committed to building their own and others' individual capabilities through ongoing professional learning and to take advantage of the opportunities for professional growth that the school system can provide. In the presentation of the questionnaire findings (Chapter 5) the role of the principal as an instructional leader was identified as an important individual capability, which can be underestimated in school systems and this result is consistent with the literature (Dinham, 2016; Robinson et al., 2008).

The semi-structured interview results (Chapter 5) revealed that principals in a school system developed others collectively by performing a leadership role based on relational trust. They developed trust by providing opportunities to build a collegial and collaborative culture of credibility within and between classroom teachers and their school leadership team, which would in turn make improvements within a broader, aligned system. The principal semi-structured interview results showed that a school system that directed a clear theory of action indicated an alignment from a school system position to the principal's position and to student achievement. The document analysis indicated the principals in a school system with both HLG and LLG schools had a central focus on students, learning and teaching; this assisted in keeping everything 'in sync'. Principals perceived the aim of a school system was not to implement an approach from a 'top down' control, but to provide principals with a map to build the capacity of the classroom teachers and the school leadership teams in order to adapt to changing agendas and implement improvement strategies effectively—remembering that improvement in authentic learning is a priority for everyone in the school system.

The results from the principal semi-structured interviews indicated that systemic school improvement could build a culture of empowerment by decentralising system practices down to the school. There was a clear understanding reflected in Appendix G regarding the need for a school system to empower classroom teachers to improve student achievement. This principle of empowerment reinforced the role of a school system to build the capacity of school leadership and classroom teachers so that they were better equipped to drive improvement in their schools. The results were consistent with the literature (Balkar, 2015) indicating that empowerment occurred when the school system enabled school leaders to have a sense of confidence, involvement, engagement, and freedom, and also allowed them to influence something important.

The discussion of results highlights that a principal, irrespective of a school system with HLG or LLG schools, exhibits three levels of educational leadership, which the school system should develop in aspiring school leaders. First, a principal is an instructional leader focused on students and their learning, which is consistent with Hattie (2005) and Robinson et al. (2008). Second, a principal is a transformational leader with an emphasis on classroom teacher practice, which coincides with Mark's views (2013, as cited in Hattie, 2015). Finally, a principal enables distributive leadership, which recognises that sustained improvement cannot be achieved only by the principal (Hallinger & Heck, 2009).

To sum up, four findings can be determined:

i. Principals, irrespective of HLG and LLG schools, perceived a school system as contributing to influencing student achievement.
ii. The principal was the person to help in developing individuals and developing others collectively within and across their system of schools.
iii. Principals were ideally placed to mediate the school system 'top down' and school 'bottom up' pressures, and to balance these pressures and align the various school initiatives such that the focus remained on student achievement.
iv. The school system needed to build principals' capacity and capabilities as instructional, transformative, and distributive leaders that build the collective capacity in others by performing a leadership role based on relational trust. This could be achieved by finding collegial and collaborative opportunities to share practice among classroom teachers and their school leadership team within and between a broader aligned system.

6.2 What Works and Does Not Work Well with Systemic School Improvement

This section synthesises the results drawn from the quantitative and qualitative results in Chapter 5. The discussion is guided by the three themes that emerged from the literature—Direction and Purpose, Building Capacity, and Adaptability for Sustainability. By combining these three salient dimensions from the analysis of results of the questionnaire, document analysis, and semi-structured interviews, a coherent understanding of a school system's influence on student achievement may be derived. Appendix Z summarises what works and what does not work well in a school system's improvement. This section also discusses other emerging areas identified from the discussion of results, including what is considered missing, and issues that have implications for systemic school improvement.

The results suggest that a school system that establishes a clear **Direction and Purpose** is the key driver to supporting systemic school improvement and has a major role in, and responsibility for, school systems (Fullan & Quinn, 2016; Hopkins, 2013). It was found that a school system articulating a clear vision, mission, and purpose works well (Appendix Z) in giving direction to schools. A belief system that focuses on enabling schools to accept and implement systemic school improvement is consistent with the literature (Chapter 2). A belief system that 'values the values' of the system (Schleicher, 2018) allows the maintenance of both unity and alignment between the classroom, school, and the school system by sharing what is meaningful and recognising that if there is a sufficient amount of shared interest that is meaningful a system with direction and purpose would form.

What appears not to work well with the theme Direction and Purpose (Appendix Z) in a school system is the connection of the classroom with the school's direction and purpose and enabling schools to live out the school system's direction and purpose. This is consistent with the results of the document analysis where some schools adopted the metropolitan Catholic school system vision and mission statements and other schools developed their own. Irrespective of the inconsistencies regarding direction and purpose, an absence of uncompromising adherence to systemic core beliefs, values, and practices tested the vision and mission integrity of either the school or the system. A school system should set the direction through having a belief system that encourages classroom teachers, school leaders, and system leaders in their natural tendencies that they are in this together because it is towards something important, in this case a student's achievement. Therefore, the results indicate that a school system should drive system thinking by working together, and being

successful together. Consequently, a belief system must have integrity and hold classroom teachers, school leaders, and system leaders to expectations on delivering systemic school improvement. A belief system can provide a school system with direction and purpose and can contribute to a most powerful blueprint for school improvement and unlocking educational change.

Appendix Z shows what works well in **Building Capacity**. The results show that a school system that builds capacity at the individual and collective level is consistent with the literature. In both cases, building capacity focuses on effective leadership as central to successful school systems and the need to constantly develop leadership for the future. If 'build individual and collective capacity' is a key driver of a school system in influencing student achievement, the results show that collaboration within the schools has been a priority. While the results show, and the literature discusses, the importance of collaboration on building teacher capacity, no discussion on the involvement of students in a systemic school improvement approach is evident. A student's role in a systemic school improvement is an area for further research.

What appears not to work well in a school system from the building capacity results is the way principals, assistant principals, coordinators, and classroom teachers perceive cultivating effective system leadership. A system leadership mindset requires a paradigm shift if collaboration is to improve student achievement. System thinking should be adopted when working together within and across the whole system if we are to build capacity in the school system.

Another result that appears not to work well in the metropolitan Catholic school system was building trusting relationships, empowering classroom teachers, and enabling schools to develop strong networks based on collaboration within and across the school system (Appendix Z). Without trust, organisational effectiveness and efficiencies are hampered (Tschannen-Moran & Gareis, 2017) and may contribute to the school system not sustaining or not improving student achievement because of more stringent and administrative regulations and practices (Schleicher, 2018). This has implications and requires determining how to build trust across the school system. The school system building capacity results are more than the sum of individual capacity and are consistent with the literature (Morin, 1992). Therefore, school systems should allow the creation of a culture of trust and learning

where the belief system of core beliefs and practices are expressed, nurtured, and enacted through the purposeful interactions of individuals in a collaborative way.

The results show that building capacity requires giving attention to school-system-wide patterns of learning and interrelationships and interactions within and across the whole system. The individual is an active participant, with innate responsibility as a classroom teacher, school leader, or system leader and is integral to creating these system-wide patterns that develop a culture of system learning collaboratively (Jefferson & Anderson, 2017). The results are consistent with "zone of proximal development theory", as Lev Vygotsky (1978) named it. This was especially evident in the school system context of collaborative learning, where classroom teachers and school leaders who have higher levels of understanding can help the less progressive learn within their zone of proximal development. In this school system context of classroom teachers, school leadership team and system leaders, and colleagues should challenge each other in order to support collaboration and success (Kuusisaari, 2014). Building capacity is a key driver of school improvement that should enable new ways of thinking, connecting, and working together for deep and sustained learning for all in the school system

The results summarised in Appendix Z propose that a school system should accommodate **Adaptability for Sustainability**. A school system's ability to change in response to uncertainty, complexity, and ambiguity is becoming more common. The results indicate that a school system that uses data effectively, and plans and monitors for continuous improvement, works well where systems are more focused on empowering schools to accept and implement systemic school improvement. The results show that a school system can contribute evidence as to practices that enhance self-organisation and emergence; for example, through annual self-school review and the opportunity for an external review within the cycle of improvement. Self-organising behaviour is consistent with the literature on living systems and is characterised by collective behaviour that self-organises in a dynamic manner in response to changing conditions (Jansen et al., 2011; Wheatley, 2006).

What appeared not to work well in this metropolitan Catholic school system was building a culture of transparency and 'no blame' provision of regular feedback, and enabling classroom teachers to be creative and innovative. Therefore, a school system has the potential to enable self-organising practices to address these inconsistencies, to clarify its intent, and to strengthen its connections. This attention to self-organising practice enables

school systems to adapt to change and develop flexible and resilient plans to monitor for sustainability. The literature (Jansen et al., 2011; Wheatley, 2006) on living systems offers a perspective that is complementary to leading school system best practices internationally on educational change. Improved school systems are required to use data effectively to adapt to complex changes and over time become sustainable in influencing student achievement.

The results from the questionnaire, document analysis, and semi-structured interviews also identified three emerging challenges relating to a systemic school improvement, which are consistent with the literature.

i. The notion of a 'one size does not fit all' approach was evident in the qualitative data. In analysing the study data in Chapter 5, integration of document analysis with the semi-structured interviews, the school system results showed that for HLG and LLG schools that there was little or no evidence of a 'one size fits all' approach in terms of a systemic school improvement approach. This discrepancy between HLG and LLG schools is an implication for further research into what are the advantages and disadvantages of the notion of a 'one size fits all' contributing to this result.

ii. The school system results identified the tension between a system-driven and a school-driven approach, which was consistent with the literature on the 'top down' or 'bottom up' school improvement approach. The results showed that the principals with delegated responsibilities are ideally placed to mediate these top down–bottom up pressures, and to balance these pressures and align the various school initiatives such that the focus remained squarely on improving school performance and student achievement.

iii. School improvement is a continuous journey. The results have shown that a school system with HLG and LLG schools was on a unique school improvement journey, which was consistent with the literature (Chapter 2) on school system best practice.

The school system literature recognises that there are three domains enabling student achievement—the classroom teacher, school leadership (principal), and system leadership. The results in this study were somewhat limited in recognising three other key domains where there is growing literature. The first is student voice (Dinham, 2016). While students are at the centre of a school system's moral purpose and they matter, the study results did not identify that students may have something valuable to offer and there may be benefits to listening to students (Rudduck, 2007). Student voice is an important priority in

educational change efforts and has had more prominence in research in the last decade than ever before (Quaglia & Fox, 2018). We know that students start and end each school year at varying levels of achievement therefore, Gonski (Gonski et al., 2018) proposes educational changes to improve individual student achievement by maximising each students learning growth regardless of their starting point and pace of learning. Gonski recommends school systems policies and practices should expect that each student should achieve at least one year's growth each year of their schooling and have a voice in their learning.

The second area is parent engagement by getting parents involved with student learning. The literature is clear that parents' engagement in their children's learning influences student achievement (Harris & Goodall, 2007; Sharratt & Planche, 2016) by setting expectations for achievement and valuing education (Hill and Tyson, 2009) and by building and sustaining a close relationship with the school (Barr & Saltmarsh, 2014). The results did not indicate any parent engagement, yet parents are considered the primary educators.

The third area not recognised in this study is the school coordinator, otherwise known as 'head of department' or 'middle leader' (Dinham, 2016). While the results indicated coordinators had a role in systemic school improvement, that role focused on collaboration, teaching and learning, professional learning, and their own individual leadership development (Appendix Z). Dinham's (2016) research on heads of department focused on the importance of coordinators encouraging the leadership capacity of others in the faculty, thus fostering the theory of distributed leadership for future succession planning and leadership sustainability. These three areas—the student, the parents, and the coordinators—require the school system to identify strategically how their role can be developed in systemic school improvement, and they are areas for further research.

It is evident from the school system results and from the literature that there is no universal approach to successful systemic school improvement. However, there are different versions of the 'right' approach that propose helpful drivers to generate improvement (Schleicher, 2018). Systemic school improvement ultimately depends on the school and/or school system context (Harris & Jones, 2018) in which it takes place; that is, the conditions that influence student achievement or the outcome of an approach can vary widely from school system to school system. This notion of the importance of context is consistent with the school improvement literature (Harris, 2002). A systemic school improvement approach may be difficult to import and implement from one school system to another without taking into

account context. This is exceedingly important, has profound implications for school systems, and is directly linked to complexity.

The discussion of results in Chapter 5 and the literature in Chapter 2 have shown that unequivocal efforts need to be made by school systems to enable a trust-based culture (Bryk & Schneider, 2002; Covey, 2006), like the Finnish school system (Schleicher, 2018), in order to develop the relationships within and across the school system to create the conditions for systemic school improvement to occur. Classroom teachers, school leaders, and system leaders have an important responsibility in creating the conditions for school system coherence where there is shared understanding of the purpose and the nature of their work individually and especially collectively. The systemic school improvement approach results are fundamentally concerned with building a learning community where classroom teachers, school leaders, and system leaders along with students develop and learn together. The results and the discussion on system thinking (Chapter 1) and on living systems (Chapter 2) suggest that in sustaining systemic student achievement for all students and across all schools in a system requires a new mindset and paradigm; a mindset that advances the knowledge of a school system dealing with daily complexity and understanding its impact on system improvement. The results of this study propose new knowledge designed to stimulate a culture of learning, enabling engagement, empowering practice, open communication, inquiry-focused collaboration, creating collaborative opportunities within, and taking risks within and across the whole system.

6.3 A New Paradigm—Complex Adaptive System Approach to Improvement

A new school system paradigm may contribute to addressing some of the complexities and gaps identified in this discussion of results regarding ‘one size does not fit all’, the tension between a system-driven or school-driven improvement, and the different performance levels for the school improvement journey for HLG and LLG schools. In addition, the role and responsibility of students, parents, and coordinators in a school system requires further consideration in the development of a new mindset for system improvement.

From the discussion of results, there has emerged the following seven principles where a school system could enable systemic school improvement.

Principle 1: Focusing on and developing a learning culture committed to a belief system.

The quantitative and qualitative results of this research show that a school system may contribute to a culture of learning where system beliefs and practices are expressed, nurtured, and enacted through purposeful interactions of classroom teachers, school leaders, and system leaders: "Implementation should not be interpreted as strict adherence to a predetermined policy; instead, it should be understood as the effort to achieve the intended purpose" (Levin, 2012, p. 28). The intention of a school system appears to extend limited learning contexts to broader ones through experiencing new practices, ideas, and challenges that are present or emerge out of a broader system context. However, an effective school system that impacts on student achievement may require a loosening or disrupting of older structures, practices, and perceptions of boundaries to enable wider trusting connections within and across larger school system contexts to collaborate on similar educational issues to learn.

Principle 2: Enabling engagement through teams and networks within the school system.

The results from the questionnaire and semi-structured interviews indicate that opportunities for new patterns of relating and working together develop by changing classroom teachers, school leadership, and system leadership behaviours. This is consistent with the literature on system capacity building, which calls for classroom teachers and school and system leaders to think creatively, work more collaboratively, and engage differently (Jefferson & Anderson, 2017; Robinson, 2018). Enabling engagement is driven by a shared belief system with a mindset of system leadership to engage for the purpose of improving student achievement.

Principle 3: Empowering practice that inspires trust through positive relationships.

The results from the questionnaire and interviews indicate that a systemic school improvement approach largely depends on relationships that inspire trust between classroom teachers, school leaders, and system leaders. This is consistent with the literature (A. Hargreaves & Fullan, 2012), discussed in Chapter 2. There is questionnaire evidence suggesting that this may not necessarily exist across the school system. A sense of an empowering culture in the school system must be appreciated and acknowledged if there is to be engagement and capacity building across the lateral and vertical levels of the school system. Only in this way will there be improvement in student achievement and a lessening

of tension between top-down and bottom-up approaches. Finding the right level of school autonomy can drive creativity and autonomy, such as in Denmark and the Netherlands (Schleicher, 2018).

Principle 4: Supporting open and inclusive communication.

A school system may contribute to a dialogue about professional practices but requires semiotics and multimodal communication (Jefferson & Anderson, 2017) within and between whole-of-system members. These study findings identify the importance of establishing relationships, requiring time to facilitate getting to know each another, meeting face-to-face and talking—all within the school system context of well-formed relationships where mutual trust, openness to learning and inclusiveness of diversity can genuinely emerge (Hargreaves & Fullan, 2012). The challenge from the results of this study is for classroom teachers and school leaders to work between, across, and beyond the system rather than within their own school community only. The researcher recognises that the establishment of relationships that are secure enough to sustain inquiry-focused communication takes time, effort, and commitment, which may require loosening the system structures, creating new opportunities, and introducing new practices to allow such an ambition to be achieved.

Principle 5: Promoting inquiry-focused collaboration that fosters critical reflection, problem-solving, and deep learning.

There were substantial findings from the questionnaire, document analysis, and interviews indicating the significance of collaborative and inquiry-focused work that fostered critical reflection within and across schools. This has been identified within the literature as having the potential to enable school system capacity building (Earl & Katz, 2010; Jefferson & Anderson, 2017; Timperley & Parr, 2010). An inquiry-focused work, through capacity building, is a shift from a 'one size fits all' practice (Stoll, 2009) with adherence to predetermined policy, to a view of implementation as the collective effort to achieve the intended purpose, which is in response to and shaped by context. This involves planning for adaptation, data interpretation, and genuine challenge, because "this interpretation of implementation does not reduce the challenge; indeed requiring implementation to be evidence-informed increases it" (Levin (2012, p. 28), and "working together in this way generates a collective commitment among professionals to get things done" (Harris, 2010, p. 201).

Principle 6: Cultivating collaborative opportunities for collective action for new ideas and understanding across all levels of the school system.

Building on Principle 5 above, the findings show that a school system requires opportunities for classroom teachers to innovate and research their teaching practice, and school and system leadership play a vital role in facilitating the development of new connections and opportunities that would expand horizons for classroom teachers. This is consistent with the literature on innovation and creativity (Jefferson & Anderson, 2017; Sharratt & Harild, 2015) and system leadership (Fullan, 2004; Harris, 2010; Hopkins, 2013). It is about becoming experienced in connecting and engaging with the multiple layers of the school system, working within, between, and across schools and beyond with other school systems:

> These are leaders who work intensely (within their own setting) and at the same time connect with and participate in the bigger picture systems will require leaders who get experience in engaging to other parts of the system. (Fullan & Quinn, 2016, p. 114).

System leaders may need to attend to structures, patterns of engagement (Robinson, 2017), and the nature of dialogue that nurtures a culture of deep and sustained learning (Fullan & Quinn, 2016; Levin & Fullan, 2008). In this way, they expand their own learning contexts and enable school system improvement in the classroom, school, and system.

Principle 7: Encouraging, accepting, and taking prudent risk.

The analysis of the data collected (Chapter 5) from the questionnaire, document analysis, and semi-structured interviews identified that a school system can empower schools, irrespective of whether they are HLG or LLG schools. This systemic empowerment allows principals to make decisions regarding system and school priorities and develop strategies within the context of their own school community. Systemic empowerment encourages risk taking and the embracing of limitations and disappointment, especially if the school system is promoting innovation and creativity that may influence student achievement.

School systems need to acknowledge that as part of the human experience there will be limitations within systemic empowerment—yet, if properly conceptualised, they may contribute to a deeper appreciation of reality and identify more effective approaches to school improvement (Pryor & Bright, 2012). Innovation, creativity, and limitations are complementary in systemic school improvement in order to deal with the challenges of education change and complexity. Pryor and Bright (2012, p. 145) posited, “limitations are inevitable, uncertainty and failure should be expected in a complex dynamical world”.

Nevertheless, the benefits of learning from one's disappointments provide an opportunity to learn, encourage creativity, build strategic thinking, and build individual capacity in helping people understand more about themselves (Pryor & Bright, 2012).

In adopting these seven principles for a school system, we can explore a new paradigm for systemic school improvement, through the notion of self-similar fractal patterns (Pryor & Bright, 2013). Complex adaptive systems operate on the repeated application of relatively few and simple principles adumbrated in a systemic school improvement approach. The application of these seven principles will vary from school to school in the school system and the emergent patterns will be different in each case. However, the fundamental values that limit the school system should be evident in every school irrespective of context or if they are an HLG or LLG school. A self-similar fractal pattern is an area for further investigation in setting up—that is, a belief system and its implications for systemic school improvement.

The findings of this study propose a new paradigm for school system improvement where the notion of system theory is not simply the whole is greater than the sum of the parts (Morin, 1992). The results suggest a new way to adapt and sustain continuous improvement as a school system in a rapidly changing complex educational context that comprises relations between the whole and its parts and interactions, which collectively create system improvement. "Educating for an uncertain world" (Schleicher, 2018, p. 226) is consistent with the literature suggesting school systems move towards an adaptive education system (Goss, 2017). A complex adaptive system offers a lens by which we can understand a school system where we come together to work and learn and to understand ourselves in these contexts. It offers new knowledge to educational change, as it offers new possibilities, new language, and new patterns of relationships, new cognitive frames and ways of reimagining. Such a lens also reveals what may go unnoticed and brings new perspectives to school system thinking, being, learning and working at different levels and roles within the school system.

This study suggests that one possible approach is to consider reconceptualising a systemic school improvement approach that provides direction and purpose, builds capacity, and is adaptable for sustainability. So, what does that look like in a school system and what are the key drivers for change that enable challenging and purposeful learning in improving student achievement?

This study's results appear to support the argument for a change to the notion of a complex adaptive systemic school improvement approach. This approach is concerned, in part, with enabling individual capacity; it is about creating a culture of deep learning where there is a focus on direction and purpose, which is shaped by a core belief system and practices are expressed, nurtured, and enacted through the purposeful interactions of individuals (Fullan, 2006). The literature has shown that the classroom teacher, school leaders, and system leaders are active participants and are integral in creating these system-wide behaviour patterns that develop into a culture of systemic school improvement (Senge, 1990; Stoll, 2009). However, school system improvement is more than the sum of individual capacity. The findings indicate, and are consistent with the literature, that learning behaviours and interrelationships within and across the whole school system are where individuals have access through engagement "to each other's thinking" (Robinson, 2017, p. 60).

As discussed in the literature (Chapter 2, Section 2.2.2) a new paradigm for school system improvement can be likened to the way a flock of birds (Jansen et al., 2011) sweeps across the sky. The flock's movements are perfectly coordinated with no apparent central control, yet each bird behaves independently. Birds that flock in thousands do not behave chaotically; there is a pattern of alignment to their behaviour. They are empowered to fly independently but are interdependent on each other by moving together with direction and purpose; yet do not collide with one another and have cohesion. In complex, threatening situations they change direction with ease and adapt to new situations to avoid danger. The interpretation of the behaviour of a flock of birds as self-organising has implications for policy-makers and leaders for a new paradigm for systemic school improvement to move from control to enabling and empowerment.

The example of a flock of birds may contribute to new thinking for systemic school improvement whose purpose should be to empower classroom teachers, school leaders, and system leaders and value each individual's contribution to the whole system through the theory of engagement (Robinson, 2017). From the discussion of results, what appears to work best for systemic school improvement within a Catholic culture are connections between the classroom, the school, and the school system that are focused strategically on building individual and collective capacity. By adopting a conceptual framework, systemic school improvement and the system's individual members are allowed to grow professionally in the pursuit of their shared belief system—a purpose that aligns system

intentions for all learners, all classroom teachers, all schools and for all within the school system. The school system could be driven by a belief system that quality education is critical for the improvement of student achievement (Levin, 2012). Finally, building school system capacity focuses on the deep and sustained learning of all educators at all levels of the school system for the collective efficacy of improving student learning (Stoll, 2009).

The discussion of results contributes something new to the literature by proposing an overarching systemic school improvement conceptual framework intended to strengthen the knowledge of a system's capacity to respond efficiently and effectively to sustained student achievement by applying living-systems research to systemic school improvement. The framework also underpins the goal of building the individual capacity of every member in the school system, using collective, sustainable, and adaptive approaches. The results indicate that much has been done to promote individual capacity building in this study of a metropolitan Catholic school system. This framework is intended to support the system in collectively building capacity through collaborative practices within and between classroom teachers, school leaders, and system leaders. Figure 6.1 is an attempt to contemplate the key drivers of a 'complex adaptive system conceptual framework' derived from the results of the discussion in this chapter.

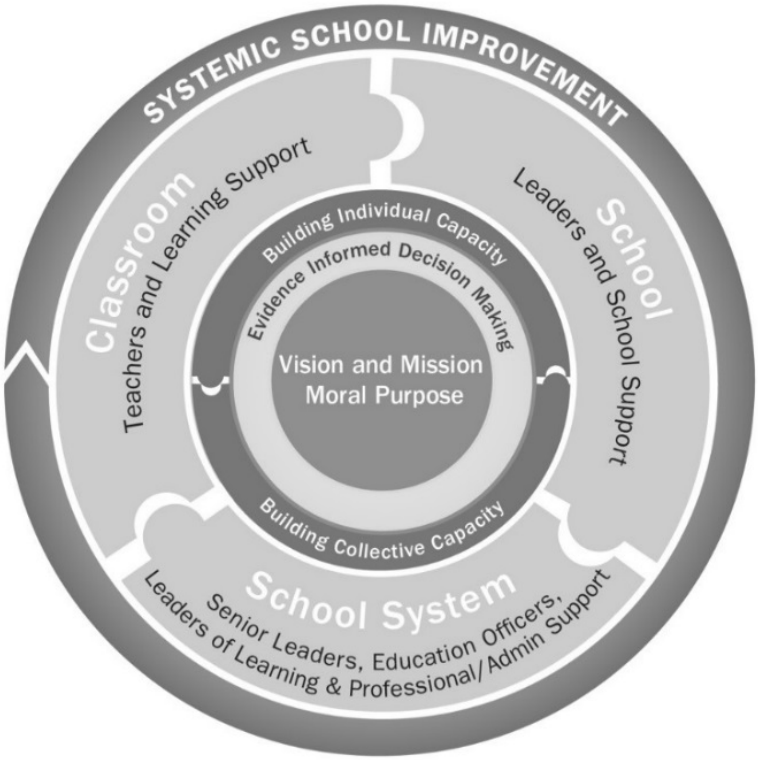

Figure 6.1 A complex adaptive system conceptual framework

In Figure 6.1, the **outer ring** is the 'watermark' for the conceptual framework for **Systemic school improvement**, which is permanently embedded as a reminder to classroom teachers, school leaders, and system leaders of our ambition to improve student achievement. The findings suggest that such an ambition should go across the whole school system for *all* students by governing for sustained growth in student achievement, by providing opportunities for innovation, by building partnerships through networks and teams, and by planning strategically and annually to achieve priorities. This outer ring also signifies that systemic school improvement is continuous by the break and arrow in the ring. This implies improvement should be sustained over time and the pattern of progress is seeing the start and end of a journey. Improvement should be broken into realistic pieces, making it visible and accessible to all, and should stop before starting to contextualise and remove some of the complexity but also introduce targeted intervention as required.

Next, the **inner ring** of **Classroom**, **School**, and **School system** reminds us of the three contexts in which a systemic school improvement approach should occur. Student achievement places learning at the heart of a systemic school improvement approach and the literature recognises that there are three domains enabling this learning for students. The first is the classroom, and the key players are the classroom teachers, long recognised in the research literature as the most influential school-based factor that influences student achievement. The second domain is the school. This includes the work of the school leadership and entire school staff, regardless of role, in creating a culture that supports student achievement and learning. This ring encompasses, within the school domain, the role of coordinators and parents. The third domain is the system, which includes the individuals who work in system roles in education and the various teams that make up the school system. This flat and interconnected approach between classroom, school, and system is opposite to any hierarchical or tri-level approach that can exhibit 'top down' or 'bottom up' tensions. This interconnected approach is therefore dependent upon the classroom teacher, principal, leadership team, coordinators and the system leaders to feel empowered and engage with each other (Couros, 2015; Robinson, 2017) in aligning their efforts to the moral purpose as responsible whole-of-system leaders. The key driver for a successful systemic school improvement approach is to empower and engage the classroom, school and system personnel to inspire trust through positive relationships that demand respect for others in an open and inclusive communication that demands honesty.

As we move **towards the centre** of the conceptual framework, the next ring recognises the significance a school system approach should place on **Building individual/collective capacity**. The interconnecting pieces for building capacity individually and collectively demonstrate that while these two elements are independent, they must also be interdependent—not one without the other—and need to interact. With individual capacity, the focus is on developing self by continually working to grow one's own professional learning to enhance performance and practice. With building collective capacity, the focus should be on developing with others a culture of sharing committed to working towards the school system belief. Building capacity in which classroom teachers, school leaders, and system leaders can successfully learn through teams and networks within and across, and, at times, beyond the school system in an inquiry-focused collaboration that fosters critical reflection and problem-solving.

In moving **closer to the centre** of the framework, the next ring is **Evidence-informed decision-making** to assist in planning. Evidence-informed decision-making is seen as an important result a school system should place on **Adaptability for Sustainability**. A school system should make decisions about a policy and practice that are grounded in the best available research data and informed by empirical evidence from the field and relevant contextual evidence; the provision of an "education, through eyes of a scientist" (Schleicher, 2008, p. 11). From this perspective, the classroom teacher and school leaders, in consultation with system leaders, cultivate and create collaborative opportunities for collective activity and construction of new knowledge and understanding across all levels of the school system.

The **centre** of the framework reflects the case study results on direction and purpose and the importance of a belief system. A systemic school approach recognises the importance of a **Vision** and **Mission** by bringing attention to learning that is authentic and cares for the development of the whole person (Bezzina, 2008; Starratt, 2007). The importance of a school system having a shared **Moral Purpose** is also recognised. In this study, within a Catholic context, there is a dual moral purpose: first, evangelisation, where Jesus is encountered and realised and, second, authentic learning that is relevant, purposeful and engaging for ALL students. These two foundations of evangelisation and authentic learning are key drivers of the framework and serve as the belief system that will provide the powerful blueprint for improvement.

The centre of the framework also represents the most important driver of all—learning and sustaining student achievement as the result of quality teaching and learning. The framework is not intended to dictate a 'one size fits all' approach, but, as the study results have shown, ensure that a systematic, strategic approach is employed in the context of the school's level of performance on an improvement journey irrespective of being an HLG or LLG school. It emphasises how effective coherent partnerships are central to improving or sustaining student achievement, which supports the 'what-works-best research' and the importance of high expectations, explicit teaching, effective feedback, use of data-informed practice, classroom management, well-being, and collaboration (CESE, 2014b). This emphasis is always on student learning and achievement but recognises that today we have a different type of learner (Schleicher, 2018). This conceptual model also advocates for students to have a role in a school system as independent learners who have a voice in their learning through student feedback. As Couros (2015) posits, empowerment is also about helping students to figure out what they can do for themselves.

This proposed systemic school improvement conceptual framework has been designed based on the literature, the study results, and the seven principles discussed earlier in this section of the chapter. The results and the literature contribute to an understanding of a coherent partnership (Fullan, 2016) through a complex adaptive system approach (Jansen et al., 2011; UhlBien & Marion, 2008) where classroom teachers, school leaders, and system leaders come together and feel empowered to lead independently and whose actions are interdependent with others in the school system such that they create system-wide patterns of improvement and a culture of learning. These patterns can influence behaviours and create an emergent culture (Jansen et al., 2011), formed in a Catholic faith culture, to sustain improvement. This emergent culture of improvement acts on their shared identity, on what is important and on how they engage, as with the metaphor of our flock of birds discussed previously in this chapter. The conceptual framework shown in Figure 6.1 builds on the notion, less is more, and is about school system 'simplexity', as Fullan (2012) called it, in finding the smallest number of high-leverage drivers, easy-to-understand actions that unleash people's talents, and influential opportunities with the greatest impact on student achievement.

This notion of 'simplexity' can inform this complex adaptive school improvement approach through the application of five key questions identified in the literature in Chapter 2.

i. How well are we going?

ii. How do we compare?

iii. What more should we aim to achieve?

iv. What must we do to make it happen?

v. How do we take action and review progress?

The results have shown that a school system needs to allow classroom teachers to be part of the decision-making in educational reforms that innovate, to be creative and research their teaching practice; and school leadership plays a vital role in facilitating the development of interactions and opportunities that will expand horizons for classroom teachers. What seems important is that system leaders become experienced in connecting and engaging with the multiple layers of the system—working within and across schools and beyond with other systems (Fullan, 2004; Fullan et al., 2004; Harris, 2010). "These are leaders who work intensely [in their own setting] and at the same time connect with and participate in the bigger picture systems that will require leaders who get experience in engaging to other parts of the system" (Fullan, 2006, p. 114). System leaders may need to attend to structures, patterns of engagement (Robinson, 2018), and the nature of dialogue that nurture a culture of deep and sustained learning (Fullan & Quinn, 2016; Levin & Fullan, 2008). In this way, they expand their own learning contexts and enable a system-improvement approach in the classroom, school, and system.

This conceptual framework for a systemic school improvement approach (Figure 6.1) provides direction and purpose, builds capacity, and is designed to enable adaptability for sustainability.

Future research into the measurement of the success of a systemic school improvement approach beyond the use of student data from external testing may contribute to the development of key indicators that reflect what is and what should be happening in the classroom, at the school, and in the whole system.

6.4 Limitations of the Research Study

The limitations of this study's findings are restricted to the research design and data collection.

6.4.1 Limitations resulting from the research design

There were three features of the research design that may have affected the quality of the findings. The first was the decision for the study to be limited to two regions of a metropolitan Catholic school system. Unfortunately, the findings of this study are not pertinent to any other school system or systemic school improvement approach and this is an implication for an area of further study.

Second, owing to the researcher's senior system leadership role in the metropolitan Catholic school system, the decision was made to engage a research assistant to collect all the data. The research assistant role in this study may have influenced participants' responses to the questionnaire and semi-structured interviews. The researcher was disappointed in not being able to collect data because it eliminated the possibility of engaging with the principals, especially during the semi-structured interviews, and to observe any non-verbal cues that might have contributed to the findings.

Third, student achievement in the study concentrated on external testing only to determine student learning gain. The study did not include other sources of student performance data— for example, school-based tests and assessments that can also significantly inform student achievement.

6.4.2 Limitations resulting from the data collection and analysis

The limitations of this study's data-collection methods are recognised. Six limitations occurred throughout the process. The most severe of these was the failure to obtain through the questionnaire separate data for HLG and LLG schools. This decision became more evident when data were collected and analysed for HLG and LLG schools in the later stages of the research. Therefore, the study relied heavily on the qualitative data from the document analysis and semi-structured interviews for HLG and LLG schools.

A second limitation was caused by the need to adhere to the conditions specified by the ethics committee regarding confidentiality and anonymity. The only way confidentiality and anonymity could be guaranteed throughout the entire study was by engaging a research assistant, although this meant excluding the researcher from the data-collection process. Practical measures were also taken to maximise participants' readiness to reply in an open and honest way, and the mixed-methods approach reduced the possibility of bias arising from the researcher's professional relationships with participants.

Third, there was still a risk that the researcher's personal biases when analysing the data could skew results, creating non-generalised findings that limited the capability to provide implications, and particularly if the semi-structured interview questions were too simplified or too targeted on the themes relevant to the analysis. It might, therefore, have been better for the research assistant who conducted the interviews to pose questions that were more distinctly related to principals. In a similar way, the semi-structured interview data were difficult to analyse given the very different school types ranging from girls, boys, or co-educational and their contexts.

Fourth, the quantitative data from the questionnaire's closed-questions items were not necessarily unbiased and often did not allow participants to explain their response. Such data were therefore analysed with caution using descriptive statistics.

Fifth, the findings should be considered to be generalised rather than fully descriptive of the population of schools, given that they were obtained by a case study approach. Generalisability refers to the transferability of findings from one setting to another (Yin, 2003). This depends on the context in which the research is conducted and the contexts to which the findings can be applied. This study aimed at providing a contextual description to enable the findings to be transferable.

Finally, the current regime of the systemic school improvement approach—implemented in the metropolitan Catholic school system as recently as 2007—is fairly new, and its impacts on student achievement, teacher capacity, school leadership capacity, and school culture have never been assessed. Although systemic school improvement research has a short history, the implementation of a systemic school improvement approach requires a paradigm shift from local school thinking to systems thinking.

These perceived limitations were recognised and catered for in the research design (Chapter 3) through verification initiatives (Section 3.8), such as triangulation of data, member checking, an audit trail, inter-rater reliability, and use of critical experts.

6.5 Conclusion

This chapter's discussion of the results addressed the major research question and sub-questions collected from the questionnaire, document analysis, and semi-structured interviews. This study offers suggestive evidence of what worked well and what did not work well within a systemic school improvement approach. On the face of it, this would suggest

that a systemic school improvement approach might be an important factor influencing student achievement.

The literature and results introduced the notion of a ‘complex adaptive system approach’ to address what may be contributing to the tension of a system-driven or school-driven systemic school improvement approach. The complex adaptive system approach also addresses the problem of ‘one size fits all’ and the performance levels of school improvement journeys for school systems with HLG and LLG schools. The study findings suggest that seven principles have a strong motivational factor for enabling systemic school improvement, drawing on the living organic system literature, which guided and framed a new paradigm—a complex adaptive system approach to improvement. Considering the study findings, the researcher found that the school system is perceived to contribute to student achievement.

The study seems to support the argument for a change in a model for systemic school improvement. These changes have implications and provide recommendations for policy and practice and areas for further research, which are presented in the next chapter.

CHAPTER 7

CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS

7.0 Introduction

In this chapter I present the conclusions, implications, and recommendations of my study. The chapter commences with an overview of the research problem, followed by the conclusions reached for the four research sub-questions. Recommendations are made for school systems and policy-makers on systemic school improvements that flow from the findings of this study.

7.1 Overview of the Research Study

The purpose of my study was to explore the influence of a school system on student achievement. With substantial government expenditure on education and increasing public demand for transparency, school systems are called to assume greater accountability for student achievement. For this reason, a focus on understanding the dynamics of the relationship between 'school systems' and 'student achievement' was at the centre of this study.

Internationally, school systems have developed into an important area of study (Barber, 2009; Barber & Mourshed, 2007; Jensen, 2012; Mourshed et al., 2010; Schleicher, 2018) with research finding significant scope for improving educational efficacy. Almost every country in the OECD has substantially increased its funding on education. Governments, therefore, have sought measurable value from educational expenditure (Barber & Mourshed, 2007), with increasing externally mandated accountability. As a result, systemic school improvement has prominence within government educational policy. The number and range of external and internal accountabilities that schools now confront have become more challenging and complex (Creemers et al., 2006; Degenhardt & Duignan, 2010). Further, an increasing number of reports, for example the Australian Gonski Report (Gonski et al., 2018) is dedicated to how student achievement can be improved through systemic school improvement addressing the impact of social, economic, ecological, and technological changes on the lives of students (Cisco Systems, 2008; Dalin, 2005; Mourshed et al., 2010; OECD, 2006; Schleicher, 2018; Watkins, Swidler & Hannan, 2012).

This overview was discussed in Chapter 1 and was the rationale for research being required in the area of school systems for the purpose of improving student achievement. This study needed to identify the key characteristics of a well-performing school system and to understand how policy and practices impact eventually on student achievement. Ultimately, it is still about striving for a balance between the complexity of system-driven improvement and school-driven improvement.

7.2 Conclusions Related to Research Questions

The major conclusions from this study are drawn from the discussion of results in Chapter 6 (Sections 6.1.1, 6.1.2, 6.1.3 and 6.1.4). Generally, it can be concluded that the participants in this study, principals, assistant principals, coordinators, and classroom teachers, in response to the four research sub-questions (SQ1, SQ2, SQ3 and SQ4) indicated that their school system was perceived to influence students' achievement.

This next section presents the key study findings and conclusions reached during the course of the study, based on the discussion of results in Chapter 6.

7.3 Key Study Findings

A synopsis of the contemporary literature, especially two bodies of literature, has informed this study from a systemic school improvement perspective, one focused on school system best practice case study research (Chapter 2, Section 2.2.1) and the other on emerging literature exploring organisations from a living-systems perspective (Chapter 2, Section 2.2.2). The findings from the discussion of results, and reflection on the impact of a school system on student achievement, have also contributed to the following seven key findings underpinning successful and well-performing school systems.

Key Finding 1 (KF1): A well-performing school system should focus on and develop a learning culture committed to a belief system.

The discussion of the results in terms of direction and purpose was covered in Chapter 6 (Sections 6.1.2.1 & 6.2) and is consistent with the literature (Barber & Mourshed, 2007; Bezzina, 2008, 2010, 2013; Chrispeels & Harris, 2006; Donohoo, 2016; Fullan & Quinn, 2016; Hopkins, 2013; Mourshed et al., 2010). It suggested that establishing a clear direction and purpose through a clear belief system is the key driver to supporting systemic school improvement and plays a major role in school systems. So a school system needs clarity to address two major questions. The first is, 'What do we believe is the purpose of education?'

The second is, 'How do we activate what we believe?' The study findings, consistent with the literature, appear to support the argument that a focus on developing a school system learning culture is enabled by articulating a clear belief system and supporting the implementation of systemic school improvement to influence student achievement. In the case of both HLG and LLG schools, the promotion and implementation of a dual moral purpose gave clear direction and purpose with high expectations paving the way to improvement.

The findings of this study indicate that a clear shared belief system is foundational and contributes to setting a school system's direction and purpose, which is guided and framed by its vision, mission, moral purpose, and values. A recommendation is made in the next section 7.4 (R2:).

Key Finding 2 (KF2): A well-performing school system enables engagement through teams and networks within and across the school system.

The discussion of the results in terms of building capacity was covered in Chapter 6 (Sections 6.1.2.2 & 6.2) and opportunities for collaboration was prominent. Collaboration was the most important theme emerging from the open-ended question on capacity building of teams and faculties in the questionnaire, as shown in Chapter 6 (Discussion of Results). This finding was consistent with the literature calling on classroom teachers, schools, and system leaders to think creatively, work more collaboratively, and engage differently (A. Hargreaves & O'Connor, 2018; Jefferson & Anderson, 2017; Robinson, 2017). This also concurs with the literature on team learning, which suggests that a school system cannot learn unless teams can learn (Senge, 2009). The study offers evidence for a model of distributive and shared leadership for the purpose of improving student achievement and an opportunity for principals to be system leaders and "focus on team over self" (Fullan, 2018) to support the learning of all staff.

Therefore, this study identified that a leadership narrative owned by classroom teachers, coordinators, school leadership teams, and system leaders is important. The engagement within and between the school system by classroom teachers, school leaders, and system leaders strengthens a sense of ownership and shared understanding, leading to greater collective efficacy through distributive and shared leadership. Such leadership is guided by a belief system and the way individuals work together in accepting joint responsibility to look at ones practice. A recommendation is made in the next section 7.4 (R3:).

Key Finding 3 (KF3): A well-performing school system empowers practice that inspires trust through positive relationships.

Again, the study findings, particularly from the questionnaire and the semi-structured interviews with principals, suggest that a systemic school improvement approach is largely dependent on relationships that encourage trust between classroom teachers, coordinators, school leadership teams, and system leaders. This is consistent with the literature (Bryk & Schneider, 2002; Tschannen-Moran & Gareis, 2017). However, in the discussion of results (Chapter 6, Section 6.2), the case study of the metropolitan Catholic school system demonstrates that what does not work well are the building of trusting relationships, empowering classroom teachers, and enabling schools to develop strong networks within and across the school system. Without trust, this study has shown that organisational effectiveness and efficiencies can be hindered and systemic school improvement hindered. The discussion of results from Chapter 6 suggests that a school system can create opportunity for relational trust through coherence in the form of empowerment, engagement, consultation, communication, conversation, and collaboration.

This study has shown that a trust-based culture matters. Building relational trust, a culture of transparency, and no blame are central to the improvement agenda in systemic school improvement. A recommendation is made in the next Section 7.4 (R4:).

Key Finding 4 (KF4): A well-performing school system has open and inclusive communication.

A school system may contribute to a dialogue about professional practices but requires semiotics (Chandler, 2007) (signs and symbols and their use or interpretation) and multimodal (textual, aural, linguistic, spatial, and visual) communication (Jefferson & Anderson, 2017). Therefore, open and inclusive communication recognises that we all communicate differently and encourages the use of a variety of open and inclusive practices, including the provision of feedback. In the discussion of results (Chapter 6), this study identified the importance of establishing positive relationships and opportunities for collaboration in order to communicate through face-to-face conversations or in discussion at meetings. This is consistent with the literature where well-formed relationships based on mutual trust, openness to learning, and inclusiveness of diverse views can genuinely occur through clear communication and expectations (A. Hargreaves & Fullan, 2012; Jefferson &

Anderson, 2017). The challenge from the findings of this study is for classroom teachers and school leadership teams to work across the school system in an open and inclusive manner, especially with regard to HLG schools and LLG schools, rather than solely within their own school community. Kofman and Senge (1993) recognised that establishing relationships that are secure enough to sustain inquiry-focused communication takes time, effort, and commitment. It may also require loosening the school system structures, creating new opportunities, and introducing new practices to allow for such ambition.

Therefore, the study concluded that communication is a critical function of a school system. Communicating openly and inclusively requires communication to be two-way, evidence-driven and multi-channelled. A recommendation is made in the next section 7.4 (R5:).

Key Finding 5 (KF5): A well-performing school system promotes inquiry-focused collaboration that fosters critical reflection, problem-solving, and deepening learning.

There were substantial findings from the discussion of results in Chapter 6 indicating the significance of collaboration and inquiry-focused work on learning and teaching that fostered critical reflection within schools. It was an area in the discussion of results that did work well within a systemic school improvement strategy. The study appears to support the literature as having the potential to enable school system capacity building (Earl & Katz, 2010; A. Hargreaves & O'Connor, 2018; Jefferson & Anderson, 2017; Timperley & Parr, 2010). Inquiry-focused collaboration, through capacity building, is a shift from a 'one size fits all' approach (A. Hargreaves & O'Connor, 2018; Stoll, 2009) with adherence to predetermined policy and practice, to a view of implementation as the collective efforts to achieve an intended purpose, which is in response to and shaped by school context. This involves planning for adaptation and sustainability, data interpretation, and monitoring for continuous improvement, because "this interpretation of implementation does not reduce the challenge; indeed requiring implementation to be evidence-informed increases it" (Levin, 2012, p. 28), and "working together in this way generates a collective commitment among professionals to get things done" (Harris, 2010, p. 201). In both HLG and LLG schools, collaboration responds to multiple sources and types of data assisted by strategic resourcing. The use of data effectively informs targeted intervention at the point of need.

One of the more significant findings to emerge from this study is that collaboration is a school system's central business—its focus on learning and teaching is what promotes

improvement. School systems respond to multiple sources and types of data, assisted by strategic planning and resourcing. A shared and collaborative understanding of the moral purpose (improving student achievement) maintains the direction of classroom teachers, coordinators, school leadership teams, and system leaders. A recommendation is made in the next section 7.4 (R6:).

Key Finding 6 (KF6): A well-performing school system cultivates collaborative opportunities for collective action for new knowledge and understanding across all levels of the school system.

This finding builds on KF5, where the discussion of results (Chapter 6, Section 6.2) offered evidence that a school system must provide opportunities for classroom teachers to innovate and research their teaching practice. School leaders and system leaders play a vital role in facilitating the development of new connections and opportunities that would expand new horizons for classroom teachers. The literature on building collective capacity (Section 2.4.5) identified collaborative practices as a key driver in systemic school improvement. The discussion of results (Sections 6.1 & 6.2) specifically identified the role of collaboration in the context of professional learning and teacher professional practice (A. Hargreaves & O'Connor, 2018). We know from the literature that both student achievement and teacher efficacy significantly improve when classroom teachers and school leaders work together (Hattie, 2009). Knight, cited in Sharratt and Planche (2016), offers collaboration as the direct action that empowers classroom teachers and leaders to construct new knowledge together, which builds and shares understanding of their practice and, most importantly, outlines specific strategies for improving the quality of the lives of their students. This notion of constructing new knowledge and shared understanding collectively is an important insight into collaboration as empowering and engaging rather than merely cooperating.

The study has also shown that building capacity impacts on student achievement. Use of individual and collective practices to support the learning of classroom teachers and school leadership teams has a direct impact on the quality of what happens for students in the classroom. A recommendation is made in the next section 7.4 (R7:).

Key Finding 7 (KF7): A well-performing school system enables, accepts, and takes prudent risk.

The discussion of the results in terms of HLG and LLG schools was covered in Chapter 6 (Sections 6.1.3, 6.1.4 & 6.2) and was consistent with the literature (Barber & Mourshed, 2007; Chrispeels & Harris, 2009; Fullan, 2016; Hopkins, 2013; Mourshed et al., 2010), suggesting that a school system can empower schools irrespective of whether they are on a different performance level in their own school improvement journey. This systemic empowerment allows principals and leadership teams to make decisions regarding system and school priorities and develop strategies within the context of their own school community as part of their professional internal accountability. Systemic empowerment encourages prudent risk-taking and embracing limitations, especially if the school system is encouraging innovation and creativity that may influence student achievement. This study found that an important aspect of professional internal accountability is a school system that encourages, accepts, and allows schools to take prudent risks in a no-blame culture. This applies to a new paradigm of a 'complex adaptive system improvement' approach that allows schools to self-organise effectively when not constrained by a top-down approach. This was evident in Chapter 6 where the discussion of results saw evidence of both HLG and LLG schools operating more as self-organising and self-improving schools through ongoing collective self-review and external review practices.

Hence, the findings of this study suggest that professional accountability is the thermometer of progress and a compass for continuous improvement. A clear shared understanding of priorities and frequent monitoring of improvement at every level of the school system supports sustained student learning growth irrespective of whether you are an HLG or LLG school. A recommendation (R8:) is made in the next section.

7.4 Implications and Recommendations

The following sections identify the areas of contribution to knowledge and propose recommendations in terms of policy and practice, as well as in terms of future research.

7.4.1 Contribution to research

The essence of all research is to find new knowledge to add to the existing body of knowledge. The significance of this study is the contribution it makes to informing school system best practice in implementing school improvement. The review of the literature

indicated that there has been limited research into the perceived influence of system school improvement on student achievement, especially in the context of Australian Catholic educational sectors. This study adds to the knowledge from previous educational research that explored the influence of systemic school improvement on student achievement. The key findings help make sense of the complexities that underlie systemic school improvement and explain why school system efforts to improve student achievement succeed in some circumstances and not in others. Therefore, this study presents an alternative paradigm for systemic school improvement which addresses the differences between a system-driven, top-down 'one size fits all' mandated approach versus a school-driven, bottom-up approach in implementing educational change. This case study makes the following contributions to research by illustrating the 'how' or 'why' things work in a real-life human social context.

The study demonstrates that a coherent school system purpose is perceived as influencing student achievement. One important conclusion from the study is that principals, assistant principals, coordinators, and classroom teachers all agree that a school system focused on direction and purpose, building capacity and adaptability for sustainability directly influences student achievement by working together in a collective manner. The study contributes to an understanding of the relationship between school system practice and student achievement. It shows that a shared belief system with a clear purpose is the foundation for coherence in the system. In particular, this study has gone a significant way towards enhancing our knowledge of coherence by demonstrating the validity of Fullan's (2016) posit that coherence is a shared depth of understanding about the purpose and nature of the work, individually and collectively.

The review of the literature indicated that internationally many school systems have undertaken some form of educational change but few have succeeded in improving student achievement. The metropolitan Catholic school system, which is at the centre of this study, has registered for many years significant and sustained student achievement. This study has identified from the findings some of the main reasons for success which in a nutshell are captured in the seven key findings. The findings shed new light on understanding which elements are specific to this individual school system and identified seven key conclusions that are in some cases different from the literature findings and in other cases validate the literature. The conclusions contribute to other school systems' and system leaders'

knowledge as they reflect and compare upon their given school system context and influence student achievement. These seven key findings are:

Key Finding 1: A well-performing school system should focus on and develop a learning culture committed to a belief system.

Key Finding 2: A well-performing school system enables engagement through teams and networks within and across the school system.

Key Finding 3: A well-performing school system empowers practice that inspires trust through positive relationships.

Key Finding 4: A well-performing school system has open and inclusive communication.

Key Finding 5: A well-performing school system promotes inquiry-focused collaboration that fosters critical reflection, problem-solving, and deep learning.

Key Finding 6: A well-performing school system cultivates collaborative opportunities for collective action for new knowledge and understanding across all levels of the school system.

Key Finding 7: A well-performing school system enables, accepts, and takes prudent risk.

This study has provided a deeper insight into a school system that fosters collaboration and influences student achievement. The key findings have shown that a school system that enables opportunities for collaboration can influence student achievement in two ways—first, by promoting inquiry-focused collaboration that fosters critical thinking, problem-solving and deeper learning and second, by cultivating collaborative opportunities for collective action for new knowledge and understanding, not only within schools but across all levels of a school system. Collaboration has been identified as the direct action that empowers principals, assistant principals, coordinators, and classroom teachers to construct new knowledge together, which builds a shared understanding of their practice and, most importantly, outlines the strategies that improve student achievement. The ability to construct new knowledge and to share understanding collectively is based on empowering and engaging rather than collaboration as cooperation. This study identifies collaboration as a key driver for systemic school improvement beyond the individual classroom and school.

In this study, the principals' perceptions indicated that they were ideally placed to mediate any school system top-down and/or school bottom-up complexity that may occur with systemic school improvement. A significant finding was the idea of self-organisation to address complexity and align school and system priorities within their context such that the focus remained on student achievement. The principal was not regarded as just another bureaucratic layer in the school system but a person who enabled engagement through a

model of distributive and shared leadership. The study has gone some way towards enhancing the understanding of leadership emergence where new ideas, ways of working, thinking, and engaging emerge because of interactions between individuals in the school system. Systemic school improvement is therefore owned not only by the principal but by assistant principals, coordinators, and classroom teachers who strengthen a sense of ownership and shared understanding leading to collective efficacy in implementing systemic school improvement. This is a substantial contribution as it provides a new set of critical issues for leadership in school systems to consider in enabling systemic school improvement that is embodied with complex educational change. This study recognises leadership as a narrative that strengthens a sense of ownership and shared understanding, leading to greater collective efficacy.

The study continues to build on this leadership narrative through practices to build school system capacity. These practices have the potential not only to influence what individuals think but how they behave. In fact, the study findings indicate a lack of understanding by principals, assistant principals, coordinators, and classroom teachers regarding system thinking and system leadership. Such a lack of understanding is limiting the system's capacity to give full expression to direction and purpose, and the ability to build collective capacity and adapt for sustainability during educational change. If a school system wishes to engage in a creative and innovative way, there is a need to live out individual roles as system leaders by engaging with colleagues beyond their own schools and more across the school system in ways that are radically different from the way school systems do at the moment in adapting to educational change. A school system needs to create opportunities for collective activity in the co-construction of new knowledge through conversations and collaboration in a culture of mutual trust that exists across the whole school system. The study provides a paradigm for the development of system thinking and system leadership that enables, accepts, and takes prudent risk.

This case study involved High Learning Gain (HLG) and Low Learning Gain (LLG) schools. The findings identified that both HLG and LLG schools are contextually different and at various stages in their performance level of improvement. Therefore, rather than adopting school system strategies uniformly in a ‘one size fits all’ approach, HLG and LLG schools make different decisions regarding improvement interventions based on their individual contexts. This study has made a contribution to systemic school improvement by recognising when

the system should mandate practice or mediate to influence schools to implement particular intervention practices. Mandated interventions are shown to deliver consistent systemic school improvement among schools while an influential approach is seen to enable schools to feel ownership and empowerment. Context is the point in determining which decisions should be made moving along the school improvement journey.

Finally, a significant contribution to the body of knowledge has been this study's introduction of the Complex Adaptive System paradigm. The use of this paradigm is comparatively new to research on a school system, and this study may be the first to apply the conceptual model to the whole-of-system approach to school system improvement. The application of the Complex Adaptive System paradigm has been shown to have value in the way it can help systems to understand the dynamics of growth and development. Complex adaptive systems create communities where individuals collectively give expression to a shared moral purpose by working independently whilst being interdependent and by adapting to educational changes through self-organisation while maintaining direction and connectivity. This study provides a conceptual framework and an alternative model for attaining the ultimate purpose of school system influence on student achievement.

7.4.2 Recommendations

After completing the study and in view of the limitations discussed in Section 6.4, the following initial recommendation can be made:

R1: Student achievement is central to systemic school improvement. Therefore, it is recommended that the findings of this study should be shared with Catholic school system principals, consultants, and directors and the research community to help inform any other school system improvement approach.

After a synopsis of the literature and the determination of seven key findings discussed earlier in this chapter we are able to make the following recommendations regarding the implications for **policy and practice**.

R2: The study found that participants believed a shared belief system contributed to setting school system direction and purpose. To ensure that there is an ongoing commitment to a shared belief system it is recommended that school systems commit to providing professional learning with a focus on connecting the classroom to the school's vision, mission, moral purpose, and values. A further

recommendation is that school systems create opportunities for the principal and school leadership teams to discuss with schools their understandings of the school system's vision, mission, moral purpose, and values, along with any new educational change implications.

R3: The study findings concluded that a leadership narrative that is owned by classroom teachers, coordinators, and school leadership team and system leaders is important in school system improvement. The recommendation is that school systems should empower principals as system leaders to create opportunities for classroom teachers, coordinators, and school leadership teams to work in teams and network within and across the whole-school system.

R4: This study determined that a trust-based culture matters in school system improvement. In order to build mutual trust it is recommended that school systems leaders create a culture that provides opportunities, individually and collectively, for classroom teachers, coordinators, and school leadership teams to contribute to educational policy and practice in the form of being consulted in areas related to their work.

R5: The study concluded that communication is a critical function of a school system. It is recommended that school system policy-makers create a communication environment that is open to shared feedback, ideas, and even criticism, at all levels of the system. In addition, the school system should enable ongoing dialogue characterised by openness to learning and inclusiveness of diverse perspectives.

R6: Unsurprisingly, the study showed that a major priority of a school system is learning and teaching. To ensure that this priority is maintained it is recommended that the school system and policy-makers deliver ongoing professional learning through a variety of collaborative practices in order to develop highly effective instructional classroom teachers, coordinators, and school leaders.

R7: A key finding from this study determined that building capacity impacts on student achievement. To continue in building system capacity it is recommended that those with leadership roles in a school system, including those in school leadership, create opportunities for individual and collective efficacy by not only researching their own practice in addressing the diverse type of learners, but also by sharing their practices across the school system for deeper learning.

R8: The study concluded that professional internal accountability is the thermometer of progress and provides direction for continuous improvement. It is recommended that those with leadership roles in a school system, including those in school leadership, enable prudent risk taking through systemic empowerment and enable innovation and creativity by working within and across a school system in the co-construction of new knowledge.

While conducting the study, a number of important implications emerged for **future research**:

R9: This study proposed a new paradigm called a 'complex adaptive system approach to improvement' to address some of the HLG and LLG school complexities identified in the discussion of results. It is recommended that future research be undertaken on complex adaptive systems to examine their usefulness and effectiveness in developing a framework for school systemic school improvement and their influence on student achievement in a period of rapid educational change and growing complexity.

R10: The implications of this study extend beyond this one case study and can apply equally to any school system in Australia. One avenue for future research should be a longitudinal study with other Catholic school systems on the school improvement impact on student achievement. It is recommended that this longitudinal study include other government school systems as a cross-national comparative study to inform policy and practice.

R11: It is recommended that Catholic school case studies be used for identifying the most appropriate improvement policies and practices for HLG and LLG schools and for discerning how those schools can be best supported by the school system in their performance level and unique improvement journey.

R12: Student achievement can be measured in many different ways. In future research into the measurement of student achievement beyond external testing (for both HLG and LLG schools), it is recommended that other methods be explored including their strategies for measuring student achievement.

R13: One avenue for future study would be to research the specific measure of empowerment. It is recommended that school system policy-makers measure the

success of systemic school improvement on empowerment, utilising a readily available instrument.

In the literature, student voice and parent engagement are recognised as contributing factors in student achievement and school improvement. Yet in this study neither students nor parents emerged in the findings, so the next two recommendations for future research are:

R14: Student voice is an increasing priority in educational change efforts. It is important for school systems to investigate how student voice can contribute to systemic school improvement. It is recommended that school systems explore how students can add to a school's strategic improvement planning and annual improvement planning in the school improvement performance levels of HLG and LLG schools.

R15: Parents are considered to be the primary educators. Parental engagement influences student achievement by being involved in student learning, setting expectations for achievement, and valuing education by building and sustaining a close relationship with the school. It is recommended that the role of parents in systemic school improvement be investigated, including their responsibilities in the development of school strategic improvement plans and annual improvement plans with regard to student learning improvement priorities.

7.5 Self-Reflection

In committing to this study, I have appreciated the valuable learning experience it has provided. The deeper understanding of the nature of research has broadened my knowledge of systemic school improvement and developed my skills in the research process. I have learned that research can at times be frustrating and sometimes mind-numbing, nevertheless enormously satisfying and even exciting. With the support of my supervisors, I was able to remain patient in the last stages of my study.

This study has provided some key themes that will assist me in my professional growth as a senior leader in a school system and hopefully impact on systemic policy and practices relating to school improvement. The study has given me the confidence to question my colleagues on systemic policy and practices, appreciate the perceptions of principals, assistant principals, coordinators, and classroom teachers, and enabled me to better understand the importance of context and empowerment in the wider educational field of

systemic school improvement. The benefit of such a study has also provided me with an opportunity to draw upon a wealth of resources in order to understand and improve systemic school improvement.

The research process has allowed me to identify limitations of such studies and has given me a methodology to evaluate the impact of other research. This study has provided me with the capability to conduct smaller research projects beyond systemic school improvement and student achievement.

7.6 Conclusion

Internationally, school systems are no longer exempt from their role and accountability in terms of their impact on student achievement. In this study, a metropolitan Catholic school system affirmed that school systems could drive direction and purpose, build capacity and adapt to sustainability, while aiming to improve and/or sustain student achievement.

Some encouraging findings have indicated that not only is a metropolitan Catholic school system able to develop systemic school improvement, but the practices are also perceived to influence student achievement.

The major challenge in sustaining student achievement is enabling deep learning for all students. At the heart of systemic school improvement is the notion of 'coherence' as Fullan & Quinn (2016) called it, coherence being a shared depth of understanding about the purpose and nature of the school system's work. This requires a systemic school improvement approach to:

i. develop and sustain direction and purpose in times of competing and complex demands both internally and externally;
ii. build capacity, individually and collectively, in order to unleash principals', assistant principals', coordinators', and classroom teachers' creativity; and
iii. adapt to the dynamic working education environment in an agile and flexible way to sustain student achievement.

The findings from this study advocate the important role of a school system in influencing student achievement. However, improving and sustaining student achievement for all students in a school system requires the exploration of new paradigms and requires movement to a systemic school improvement that builds the collective capacity across the whole school system through a complex adaptive system approach.

Catholic education in Australia has developed over decades into an organised, well-performing, and systemised school system recognised by statutory authorities and by state and federal governments. The Catholic school system has developed a strong non-governmental educational identity in a rapidly changing appreciation of the mission of the Catholic Church. From the findings of this study, it can be said that Catholic school systems perform well and will continue, as they grow, to be influential in terms of leading, improving, and sustaining student achievement.

APPENDICES

Appendix A Ethics Approval

Human Research Ethics Committee
Approval Form

Principal Investigator/Supervisor: Prof Jim Bright

Co-Investigators:

Student Researcher: Michael Krawec (Doctoral)

Ethics approval has been granted for the following project:
Systemic school improvement strategy and student achievement: A Case Study

for the period: 30/09/2017

Human Research Ethics Committee (HREC) Register Number: 2012 323N

This is to certify that the above application has been reviewed by the Australian Catholic University Human Research Ethics Committee (ACU HREC). The application has been approved for the period given above.

Researchers are responsible for ensuring that all conditions of approval are adhered to, that they seek prior approval for any modifications and that they notify the HREC of any incidents or unexpected issues impacting on participants that arise in the course of their research. Researchers are also responsible for ensuring that they adhere to the requirements of the *National Statement on Ethical Conduct in Human Research,* the *Australian Code for the Responsible Conduct of Research* and the University's *Code of Conduct*.

Any queries relating to this application should be directed to the Manager, Research Ethics and Integrity (resethics.manager@acu.edu.au).

Kind regards

Manager, Research Ethics and Integrity
Date 30/05/2018

Research Ethics | Office of the Deputy Vice-Chancellor (Research)
Australian Catholic University
T: +61 2 9739 2646
E: Res.Ethics@acu.edu.au
W: ACU Research Ethics

Appendix B Metropolitan School System Approval

Catholic Education Office Sydney
www.ceosyd.catholic.edu.au

6 June 2013

Ref: Research Application 849

Michael Krawec
Catholic Education Office
3 Keating Street
LIDCOMBE NSW 2141

Dear Michael

RE: RESEARCH APPLICATION REF: 849 – LETTER OF APPROVAL

Thank you for the submission of your application to conduct research in Archdiocesan Catholic Schools under the jurisdiction of the Catholic Education Office (CEO) Sydney. Approval is given by CEO Sydney to conduct this study. **This approval is granted subject to full compliance with NSW Child Protection and Commonwealth Privacy Act legislation.** It is the prerogative of any Principal or staff member whom you might approach to decline your invitation to be involved in this study or to withdraw from involvement at any time.

Permission is given for you to approach the Principals of the schools nominated, listed below, requesting participants for your study: *"A Systemic School Improvement Strategy and Student Achievement: A Case Study";*

Permission to contact secondary schools in the Eastern and Southern Regions.

COMMONWEALTH PRIVACY ACT
The privacy of the school and that of any school personnel or students involved in your study must, of course, be preserved at all times and comply with requirements under the Commonwealth Privacy Amendment (Private Sector) Act 2000. In complying with this legislation, the CEO Sydney has decided that, for the purposes of research applications, students are not to be identified by anything other than age and/or gender.

NSW CHILD PROTECTION REQUIREMENTS
It is noted that your proposed study methodology **does not involve direct unsupervised contact with students.** Approval to conduct this research study in Sydney Archdiocesan Catholic Schools under the jurisdiction of the CEO Sydney is granted subject to the researcher's **full compliance** with the **'Commission for Children and Young People Act 1998'.**

FURTHER REQUIREMENTS
When you have established your participating schools, please **complete the attached form and return it** to this office.

It is a condition of approval that when your research has been completed you will forward a **summary report of the findings and/or recommendations** to this office as soon as practicable after results are to hand.

All correspondence relating to this Research should note 'Ref: Research Application 849.

Please contact me at this office if there is any further information you require. I wish you well in this undertaking and look forward to learning about your findings.

Yours sincerely

Dr Michael Bezzina
Director of Teaching and Learning
Email: pcs@syd.catholic.edu.au

38 Renwick Street, PO Box 217, Leichhardt NSW 2040 • Phone (02) 9569 6111 • Fax (02) 9550 0052
Eastern Region 33 Banks Avenue, Daceyville NSW 2032 • Phone (02) 8344 3000 • Fax (02) 8344 3097
Inner Western Region 3 Keating Street, Lidcombe NSW 2141 (Locked Bag 83, 1825) • Phone (02) 9643 3600 • Fax (02) 9643 3609
Southern Region 300 The River Road, Revesby Heights NSW 2212 • Phone (02) 9772 7000 • Fax (02) 9772 7099

Appendix C Main Questionnaire

ACU
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ACU education
Transforming learning communities

Questionnaire

Dear Colleague

I warmly invite you to participate in this online questionnaire. This questionnaire relates to the CEO Sydney School Review and Improvement (SRI) Framework and the ways in which a systemic school improvement strategy influences student achievement.

The linked processes of the School Review and Improvement Framework are:

- Strategic Improvement Plan (SIP)
- Annual Improvement Plan (AIP)
- Annual Evaluation of SRI Components using How Effective is Our Catholic School?
- Annual Report to the Community
- Cyclic Review of our School's Learning Improvement Journey

'How Effective is Our Catholic School?(HECS)' Indicators of Effectiveness for Catholic Schools' (CEO Sydney 2011) sets out agreed criteria for school review and improvement for the Sydney Archdiocesan system of schools. This document is underpinned by the Archdiocesan Vision and Mission Statements and has at its centre the students in Sydney Catholic schools. Since the introduction of the School Review and Improvement (SRI) Framework in 2005, Principals have engaged their school communities strategically and creatively in implementing school improvement approaches in response to the identified needs of their students. The Indicators of Effectiveness in the eight Key Areas align with the Key Areas of the system's Strategic Improvement Plan 'Building on Strength: Future Directions for Sydney Catholic Schools', which sets out strategic improvement priorities for Sydney Catholic schools for the period 2011 to 2015.

Instructions for completing the Questionnaire

Most of these questions ask you to rate your agreement with a series of statements about SRI. However, at the end of the questionnaire you are asked to provide examples of the ways in which you see SRI working and influencing other aspects of school life. I would be very grateful if you would take the time to provide insights where you can about these matters. If you are genuinely unable to comment in Part C because you don't have enough information, please simply mark "I cannot make a valid judgement" in the circle. If you are not aware of relevant instances in any of the questions in Part B, please leave the space blank.

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The completion of this survey indicates your consent to the conditions outlined in the information letter sent to you earlier.

Please complete and submit this questionnaire by _____?

Please fill in one circle only that applies to you.	Please mark like this ○ ○ ○ ● ○	Not Like this ○ ○⊘⊗○

PART A: BASIC DEMOGRAPHIC INFORMATION

1.	What is your age range?	○ 21 to 30 ○ 31 to 40 ○ 41 to 50 ○ 51 to 60 ○ 61 or older.
2.	What is your gender?	○ Female ○ Male
3.	Please indicate your total years of employment with the Sydney Catholic School System.	○ 5 years or less ○ 6-10 years ○ 11-15 years ○ 16-20 years ○ More than 20 years
4.	Please indicate your total years of employment in your current school.	○ 5 years or less ○ 6-10 years ○ 11-15 years ○ 16-20 years ○ More than 20 years
5.	What is the enrolment of the school with which you are associated?	○ 1-600 students ○ 601 - 900 students ○ More than 900 students ○ Central or Regional Office
6.	What is the type of school you are associated with?	○ Girls only ○ Boys only ○ Co-education
7.	What role best describes your current position within the Sydney Catholic school system?	○ Principal ○ Assistant Principal ○ Religious Education Coordinator ○ Coordinator ○ Classroom Teacher ○ Regional Consultant ○ Other CEO Regional Office Personnel ○ Other CEO Central Office Personnel

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PART B : SCHOOL REVIEW and IMPROVEMENT PRACTICES INFORMATION

THE FOLLOWING QUESTIONS ASK YOU TO DESCRIBE THE WAY THE SCHOOL CONDUCTS THE FOLLOWING SCHOOL REVIEW AND IMPROVEMENT (SRI) PRACTICES IN TERMS OF YOUR PERCEPTION OF THE LEVEL OF AWARENESS, USAGE AND EFFECTIVENESS IN THE SCHOOL:

1. **The following questions relate to the School Strategic Improvement Plan (SIP). The Strategic Improvement Planning process is an ongoing process of ensuring that the Mission of your Catholic school leads to a compelling and shared Vision of your aspirations and intentions for our students within a specified timeframe of 3 to 5 years.**

1.1 Please indicate the **level of awareness** of the SIP in your school.

- o Nearly all are unaware of the SIP.
- o Most show little awareness of but a few are aware of the SIP.
- o Mixed, about half are aware and the other half are not aware of the SIP.
- o Most are aware, but a few are not aware of the SIP.
- o Nearly all are aware of the SIP.

1.2 Please indicate the **level of use** of the SIP in your school.

- o No use of the SIP.
- o Little use of the SIP.
- o Most staff have used the SIP at some time.
- o Nearly all staff have used the SIP.
- o All staff have used the SIP.

1.3 Please rate the **level of effectiveness** of SIP in your school.
(1= not effective to 5 = highly effective).

1	2	3	4	5
○	○	○	○	○

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2.	**The following questions relate to the School Annual Improvement Plan (AIP). Schools implement their Strategic Improvement Plan each year through a focussed Annual Improvement Plan (AIP). The AIP specifies the Key Improvements the school intends to achieve for improving learning outcomes for students within that year.** **2.1** Please indicate the **level of awareness** of the AIP in your school. o Nearly all are unaware of the AIP. o Most show little awareness but a few are aware of the AIP. o Mixed, about half are aware and the other half are not aware of the AIP. o Most are aware, but a few are not aware of the AIP. o Nearly all are aware of the AIP. **2.2** Please indicate the **level of use** of the AIP in your school. o No use of the AIP. o Little use of the AIP. o Most staff have used the AIP at some time. o Nearly all staff have used the AIP. o All staff have used the AIP. **2.3** Please rate the **level of effectiveness** of the AIP in your school. (1= not effective to 5 = highly effective). 1 ○ 2 ○ 3 ○ 4 ○ 5 ○

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3. **The follow questions relate to the Schools Annual Evaluation of SRI Components. The Annual Evaluation of SRI Components is an opportunity for the school as a self-reviewing, self-improving, effective Catholic school to engage in reflective and collaborative processes at the end of each year.**

3.1 Please indicate the **level of awareness** of the Annual Evaluation of SRI Components in your school. By this I mean ….

- o Nearly all are unaware of the Annual Evaluation of SRI Components.
- o Most show little awareness but a few are aware of the Annual Evaluation of SRI Components.
- o Mixed, about half are aware and the other half are not aware of the Annual Evaluation of SRI Components.
- o Most are aware, but a few are not aware of the Annual Evaluation of SRI Components.
- o Nearly all are aware of the Annual Evaluation of SRI Components.

3.2 Please indicate the **level of use** of the Annual Evaluation of SRI Components in your school.

- o No use of the Annual Evaluation of SRI Components.
- o Little use of the Annual Evaluation of SRI Components.
- o Most staff have used the Annual Evaluation of SRI Components at some time.
- o Nearly all staff have used the Annual Evaluation of SRI Components.
- o All staff have used the Annual Evaluation of SRI Components.

3.3 Please rate on the **level of effectiveness** of the Schools Annual Evaluation of SRI Components in your school (1= not effective to 5 = highly effective).

1	2	3	4	5
○	○	○	○	○

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4. **The following questions relate to the Schools Annual Report to the Community. The Annual School Report to the Community provides parents and the wider School community with fair, reliable and objective information about School performance measures and policies. The Report also outlines information about initiatives and developments of major interest and importance during the year and the achievements arising from the implementation of the School's Annual Improvement Plan.**

4.1 Please indicate on the **level of awareness** of the Schools Annual Report to the Community in your school. By this I mean ….

- o Nearly all are unaware of the Schools Annual Report to the Community.
- o Most show little awareness but a few are aware in the Schools Annual Report to the
- o Community.
- o Mixed, about half are aware and the other half are not aware of the Schools Annual
- o Report to the Community.
- o Most are aware, but a few are not aware of the Schools Annual Report to the
- o Community.
- o Nearly all are aware of the Annual Evaluation of SRI Components.

4.2 Please indicate on the **level of use** of the Schools Annual Report to the Community in your school.

- o No use of the Schools Annual Report to the Community.
- o Little use of the Schools Annual Report to the Community.
- o Most staff have used Schools Annual Report to the Community at some time.
- o Nearly all staff have used the Schools Annual Report to the Community.
- o All staff have used the Schools Annual Report to the Community.

4.3 Please rate on the **level of effectiveness** of the Schools Annual Report to the Community in your school (1= not effective to 5 = highly effective).

1	2	3	4	5
○	○	○	○	○

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5. **The following questions relate to the Cyclic Review of our School's Learning Improvement Journey. The Cyclic Review process is an opportunity for the school as a self-reviewing, self-improving effective Catholic school to review its learning improvement journey by looking back and looking forward and to be supported and challenged in this activity with an External Review Team every five years.**

5.1 Please indicate the **level of awareness** of Cyclic Review in your school.

- o Nearly all are unaware of the Cyclic Review.
- o Most show little awareness but a few are aware of the Cyclic Review.
- o Mixed, about half are aware and the other half are not aware of the Cyclic Review.
- o Most are aware, but a few are not aware of the Cyclic Review.
- o Nearly all are aware of the Cyclic Review.

5.2 Please indicate the **level of use** of the Cyclic Review recommendations in your school.

- o No use of the Cyclic Review recommendations.
- o Little use of the Cyclic Review recommendations.
- o Most staff have used the Cyclic Review recommendations at some time.
- o Nearly all staff have used the Cyclic Review recommendations.
- o All staff have used the Cyclic Review recommendations.

5.3 Please rate the **level of effectiveness** of Cyclic Review in your school.
(1= not effective to 5 = highly effective).

1	2	3	4	5
○	○	○	○	○

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PART C : IMPACT OF THE SCHOOL REVIEW and IMPROVEMENT FRAMEWORK

TO WHAT EXTENT DO YOU AGREE/DISAGREE WITH THE FOLLOWING STATEMENTS ABOUT THE IMPACT OF THE CEO SYDNEY SCHOOL REVIEW AND IMPROVEMENT (SRI) FRAMEWORK IN YOUR SCHOOL?

	THE SRI FRAMEWORK:	Strongly Disagree	Disagree	Agree	Strongly Agree	I cannot make a valid judgement
1.	Gives our school direction towards improving student achievement.	○	○	○	○	○
2.	Fosters a shared moral purpose in the school.	○	○	○	○	○
3.	Connects our school with the CEO Sydney Vision.	○	○	○	○	○
4.	Connects the classroom with the school Vision.	○	○	○	○	○
5.	Connects our school with the school Vision.	○	○	○	○	○
6.	Enables our school to live out the Sydney CEO Vision.	○	○	○	○	○
7.	Focuses on student achievement.	○	○	○	○	○
8.	Encourages our school to set high standards.	○	○	○	○	○
9.	Focuses on narrowing the gap in student learning.	○	○	○	○	○
10.	Allows Principals to sustain student learning and achievement.	○	○	○	○	○
11.	Enables Principals to participate in teacher learning and development.	○	○	○	○	○
12.	Helps Principals to establish strategic goals within the school.	○	○	○	○	○
13.	Encourages Principals to participate in planning, coordinating and evaluating teaching and curriculum.	○	○	○	○	○
14.	Supports Principals to focus on strategic resource allocation within the school.	○	○	○	○	○
15.	Enables Principals to creating a supportive environment for all staff.	○	○	○	○	○
16.	Encourages Principals to develop an attitude towards innovation and action.	○	○	○	○	○
17.	Emphasises for Principals the need for a school culture of success.	○	○	○	○	○
18.	Enables Principals to focus on continuous school improvement.	○	○	○	○	○

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		Strongly Disagree	Disagree	Agree	Strongly Agree	I cannot make a valid judgement
19.	Allows principals to promote a focus on teaching and learning improvement.	○	○	○	○	○
20.	Allows teachers to extend their own capacity for improvement through creativity and innovation.	○	○	○	○	○
21.	Enables teachers to research their practice.	○	○	○	○	○
22.	Promotes effective teaching.	○	○	○	○	○
23.	Gives teachers more responsibility for the school's teaching and learning process.	○	○	○	○	○
24.	Focuses on students' learning.	○	○	○	○	○
25.	Promotes teacher leadership as a shared responsibility between the principal and teachers.	○	○	○	○	○
26	Engages teachers in working collaboratively.	○	○	○	○	○
27.	Enables the school Leadership Team to work collaboratively.	○	○	○	○	○
28.	Facilitates collaborative practices to address education reform.	○	○	○	○	○
29.	Moves the school community towards the concept of a learning organisation.	○	○	○	○	○
30.	Creates productive learning teams who share the mission, vision and values.	○	○	○	○	○
31.	Builds trusting relationships within the school.	○	○	○	○	○
32.	Focuses on continuous improvement.	○	○	○	○	○
33.	Emphases evidence-based indicators of effectiveness.	○	○	○	○	
34.	Encourages teachers to learn from each other.	○	○	○	○	○
35.	Creates opportunities to reflect on their own teaching practice.	○	○	○	○	○
36.	Actively encourages teachers to build their own professional learning communities within the school.	○	○	○	○	○
37.	Promotes teacher collaboration and networking.	○	○	○	○	○
38.	Creates new ways of thinking about transforming schools to improve student achievement.	○	○	○	○	○
39.	Creates alignment between classroom, school and system	○	○	○	○	○
40.	Brings about system-wide improvement in student achievement.	○	○	○	○	○

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		Strongly Disagree	Disagree	Agree	Strongly Agree	I cannot make a valid judgement
41.	Builds professional learning communities across the school system.	○	○	○	○	○
42.	Effectively monitors student achievement.	○	○	○	○	○
43.	Encourages a range of sources to generate data.	○	○	○	○	○
44.	Assists in building a learning culture in the school.	○	○	○	○	○
45.	Compares our school's current performance with that of previous years.	○	○	○	○	○
46.	Compares ourselves with our performance with that of like schools.	○	○	○	○	○
47.	Builds a culture of transparency and 'no blame'.	○	○	○	○	○
48.	Gives regular feedback about student achievement.	○	○	○	○	○
49.	Supports school improvement in our school system.	○	○	○	○	○
50.	Challenges school improvement in our school.	○	○	○	○	○
51.	Informs student learning achievement.	○	○	○	○	○
52.	Gains an understanding of teacher performance.	○	○	○	○	○
53.	Analyses school performance.	○	○	○	○	○
54.	Assists our school to implement the educational change process.	○	○	○	○	○
55.	Focuses on our school as a place of school improvement.	○	○	○	○	○
56.	Assists our school leaders to anticipate problems before change is introduced.	○	○	○	○	○
57.	Provides our school with a framework for future planning.	○	○	○	○	○
58.	Helps our teachers to manage innovation and change.	○	○	○	○	○
59.	Provides a map for school improvement.	○	○	○	○	○
60.	Gives the principal a comprehensive structure for effective instructional leadership.	○	○	○	○	○
61.	Provides a clear process of planning for school improvement.	○	○	○	○	○
62.	Provides a model for strategic planning.	○	○	○	○	○
63.	Offers a structure to stimulating change for improvement.	○	○	○	○	○
64.	Enables our school to target initiatives for those outcomes recognised as being below expectation.	○	○	○	○	○

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		Strongly Disagree	Disagree	Agree	Strongly Agree	I cannot make a valid judgement
65.	Enables shared professional reflection and discussion.	○	○	○	○	○
66.	Enables staff to reflect upon their own roles in accomplishing positive influences on student achievement.	○	○	○	○	○
67.	Provides a set of processes for our school to monitor school improvement.	○	○	○	○	○
68.	Enables our school to identify and share best practice.	○	○	○	○	○
69.	Allows our school to pinpoint areas for improvement.	○	○	○	○	○
70.	Is a tool for our school's accountability for student performance?	○	○	○	○	○
71.	Provides strategies for internal self-review.	○	○	○	○	○
72.	Allows for external review of our school's performance.	○	○	○	○	○
73.	Empowers our school towards greater ownership of student achievement.	○	○	○	○	○
74.	Assists our school to understand self-review and external review as complementary.	○	○	○	○	○
75.	Is at the heart of sustaining school transformation.	○	○	○	○	○
76.	Ensures alignment and coherence for monitoring school improvement.	○	○	○	○	○
77.	Provides for school improvement sustainability into the future.	○	○	○	○	○

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PART D : EXAMPLES OF THE ROLE OF SCHOOL REVIEW and IMPROVEMENT

If you are not aware of relevant instances in any of the questions in this section, please leave the space blank.

1.	**Please share an example of the way the SRI Framework has influenced your school's sense of direction and purpose.**
2.	**Please share an example of the way the SRI Framework has influenced the capacity building of people in your school. Capacity building being a long-term and continuous driver for change that generates better measurable achievements for students by creating opportunities where learning is endemic.**
3.	**Please share an example of the way the SRI Framework has influenced the capacity building of teams and faculties in your school.**
4.	**Please share an example to the way the SRI Framework has helped your school adapt to educational change.**
5.	**Please share an example of the way the SRI Framework has sustained continuous improvement in our school. Continuous improvement is an ongoing effort to improve and sustain student achievement over time.**
	Thank you for taking the time to complete this survey.

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Appendix D Demographic Information (N=193)

	Choices	N	Valid (%) *	Accumulation	Mean	SD
Age	21 to 30	7	3.6	3.6	3.1	0.9
	31 to 40	40	20.7	24.4		
	41 to 50	74	38.3	62.7		
	51 to 60	62	32.1	94.8		
	61 or older	10	5.2	100.0		
	TOTAL	**193**	**100**			
Gender	Female	103	59.3	59.3	1.5	0.5
	Male	88	46.1	100.0		
	TOTAL	**191**	**100.0**			
Years of employment with a Sydney Catholic school	5 years or less	11	5.8	5.8	3.8	1.3
	6–10 years	22	11.5	17.3		
	11–15 years	45	23.6	40.8		
	16–20 years	24	12.6	53.4		
	More than 20 years	89	46.6	100.0		
	TOTAL	**191**	**100**			
Years of employment in your current school	5 years or less	64	33.5	33.5	2.4	1.4
	6–10 years	50	26.2	59.7		
	11–15 years	37	19.4	79.1		
	16–20 years	15	7.9	86.9		
	More than 20 years	25	13.1	100.0		
	TOTAL	**191**	**100.0**			
Enrolment at the school with which you are associated	1–600 students	47	24.5	24.5	2.3	0.9
	601–900 students	40	20.8	45.3		
	More than 900 students	95	49.5	94.8		
	Central or Regional Office	10	5.2	100.0		
	TOTAL	**192**	**100.0**			
Type of school you are associated with	Girls only	41	21.6	21.6	2.2	0.9
	Boys only	83	43.7	65.3		
	Co-education	56	29.5	94.7		
	Central or Regional Office	10	5.3	100.0		
	TOTAL	190	100.0			
Role	Principal	22	11.5	11.5	3.7	1.5
	Assistant Principal	17	8.9	20.3		
	Religious Education Coordinator	16	8.3	28.6		
	Coordinator	105	54.7	83.3		
	Classroom Teacher	20	10.4	93.8		
	Regional Consultant	4	2.1	95.8		
	Other SCS Regional Office Personnel	5	2.6	98.4		
	Other SCS Central Office Personnel	3	1.6	100.0		
	TOTAL	**192**	**100.0**			
* Due to missing values the total response for each question differs. Valid % calculates the percentage on the total of those who answered the question.						

Appendix E Part C questionnaire direction and purpose

Salient Dimension: Direction and Purpose Items 1 –9		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid Judgment %
C 1.	Gives our school direction towards improving student achievement.	183	0	6.6	40.4	52.5	6.6	92.9	0.5
C 2.	Fosters a shared moral purpose in the school.	183	1.6	6.6	53.0	37.7	7.7	90.7	1.1
C 3.	Connects our school with the system Vision.	183	1.1	6.7	43.2	45.4	7.8	88.6	3.3
C 4.	Connects the classroom with the school Vision.	182	2.2	12.6	51.1	32.4	14.8	83.5	1.6
C 5.	Connects our school with the school Vision.	183	1.1	6.6	44.3	45.9	7.7	90.2	2.2
C 6.	Enables our school to live out the system Vision.	182	1.1	13.2	44.5	39.0	14.3	83.5	2.2
C 7.	Focuses on student achievement.	182	1.1	6.6	48.7	43.4	7.7	92.1	2.2
C 8.	Encourages our school to set high standards.	182	1.6	3.3	31.3	61.0	4.9	92.3	2.7
C 9.	Focuses on narrowing the gap in student learning.	183	1.6	12.4	47.0	34.4	14.0	81.4	3.8
	Mean						**9.6**	**88.4**	**2.2**
	Standard Deviation						**3.5**	**4.2**	**1.0**

Appendix E shows high agreement for the majority of statement items, with a mean aggregate agreement of 88.4%. In five question items (C1, C2, C5, C7 and C8), the agreement was above 90% and the highest question items (C1, C7 and C8) related to giving the school direction and purpose to improve student achievement, focusing on student achievement and encouraging schools to set high standards. Conversely, the mean for the aggregated disagreement for the nine items was 9.6%. Three statement items (C4, C6 and C9) had an aggregated disagreement higher than the mean. These items were concerned with strategies connecting the classroom alignment with the school vision (C4 – 14.8%), narrowing the gap in student learning (C9 –14.0%) and connecting the classroom to the system vision (C6 – 14.3%).

The findings from the perceptions of the participants suggested that a systemic school improvement approach gave direction and purpose with students at the centre and a focus on student achievement in aiming to meet the school's moral purpose (C1, C2). The findings indicate that vision and mission (C3, C5) gave direction and purpose to schools in living out their dual moral purpose of evangelisation and learning.

The analysis indicated slightly less success between the classroom to the school vision (C4) and to the system vision (C6), and a lack of emphasis on narrowing the gap in student learning (C9).

Appendix F Part C questionnaire building principal capacity

Dimension 2: Build Capacity – Building Principal Capacity Items 10–19		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 10.	Allows Principals to sustain student learning and achievement.	183	1.1	9.8	46.4	37.2	10.9	83.6	5.5
C 11.	Enables Principals to participate in teacher learning and development.	183	1.6	10.4	42.6	38.3	12.0	80.9*	7.1
C 12.	Helps Principals to establish strategic goals within the school.	183	0	2.2	26.2	65.6	2.3	91.8	6.0
C 13.	Encourages Principals to participate in planning, coordinating and evaluating teaching and curriculum.	183	2.7	4.4	33.3	54.1	7.1	87.4	5.5
C 14.	Supports Principals to focus on strategic resource allocation within the school.	183	0.5	3.8	39.9	48.6	4.3	88.5	7.1
C 15.	Enables Principals to create a supportive environment for all staff.	182	2.2	9.9	41.2	46.1	12.1	87.3	6.6
C 16.	Encourages Principals to develop an attitude towards innovation and action.	182	1.6	2.7	41.8	46.7	4.3	88.5	7.1
C 17.	Emphasises for Principals the need for a school culture of success.	183	0.5	7.7	36.1	49.7	8.2	88.8	6.0
C 18.	Enables Principals to focus on continuous school improvement.	183	0.5	2.7	29.5	60.1	3.2	89.6	7.1
C 19.	Allows Principals to promote a focus on teaching and learning improvement.	182	1.1	3.8	32.4	58.2	4.9	90.6	4.4
	Mean						**6.9**	**87.4**	**6.2**
	Standard Deviation						**3.1**	**3.1**	**0.9**

Note: * Item two standard deviations below the mean.

Appendix F shows high agreement for the majority of the ten items, with a mean agreement of 87.4%. Six of the items (C12, C13, C14, C16, C18 and C19) were on or above the average and two were one standard deviation above the mean at 90.5% (C12 and C19). These statement items are centred around planning for teaching and learning with a focus on establishing strategic goals and resource allocation. Another emerging theme was around continuous improvement with a focus on teaching and learning in creating a supportive environment for all staff. The final theme evolved around developing an attitude towards innovation and action.

Five statement items (C10, C11, C13, C15 and C17) showed a disagreement above the mean disagreement of 6.9%. Item C10 (10.9%) highlighted concerns sustaining student learning and achievement, C11 (12.0%); concerns around principal's participation in teacher learning and

development, C13 (7.1%) concerns about participating in planning, coordinating and evaluating teaching and learning, C15 (12.1%) concerns around creating a supporting environment for all staff and C17 (8.2%) concerns about developing a school culture of success.

One statement item (C11 – 80.9%) was two standard deviations below the mean indicating some difference of opinion between this and the other items. Statement C11 12.0% of respondents disagreed on this item, 7.1% also indicated they had insufficient information to be able to decide. These two categories collectively represented almost 20% of respondents. The analysis indicated an absence of visibility of the principal to participate in teaching and learning professional development. The principal's role was not seen primarily as a teaching and learning leader or an instructional leader.

This finding indicated that a systemic school improvement approach was perceived to build principal capacity as a strategic leader, who plans, sets goals and determines resource allocation for continuous improvement with a focus on innovation. The notion of school leadership suggested more transactional rather transformational, in particular to pedagogy and students and their learning. School leadership is explored more fully via the document analysis and semi-structured interviews with six principals.

Appendix G Part C questionnaire building teacher capacity

Dimension 2: Building Capacity Building Teacher Capacity Items 20– 26		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree	I cannot make a valid judgement %
C 20.	Allows teachers to extend their own capacity for improvement through creativity and innovation.	183	4.9	19.7	47.0	25.7	24.6	72.7	2.7
C 21.	Enables teachers to research their practice.	180	2.8	33.9	53.3	7.8	38.7*	61.1	2.2
C 22.	Promotes effective teaching.	179	2.2	14.0	58.7	21.8	16.2	80.5	3.4
C 23.	Gives teachers more responsibility for the school's teaching and learning process.	180	2.8	20.6	52.2	22.2	23.4	74.4	2.2
C 24.	Focuses on students' learning.	180	1.7	10.6	51.7	35.6	12.3	87.3	0.6
C 25.	Promotes teacher leadership as a shared responsibility between the principal and teachers.	180	3.9	17.2	49.4	26.1	21.1	75.5	3.3
C 26	Engages teachers in working collaboratively.	179	1.7	16.2	54.2	25.7	17.9	79.9	2.2
	Mean						**21.7**	**75.9**	**2.4**
	Standard Deviation						**7.6**	**7.6**	**0.9**

Note: *_Item two standard deviations above the mean.

Appendix G illustrates a higher level of aggregated disagreement (21.7%) on these statement items compared to the building principal capacity shown in Appendix F (6.9%). Three items (C20, C21 and C23) had an aggregated disagreement above the mean disagreement of 21.7%, with the highest of these C21 – 38.7%, exceeding two standard deviations above the mean. This indicated that participants did not believe that the systemic school improvement approach enabled teachers to research their practice. The second item C20 – 24.6% built on the previous perception in C21 that the improvement approach did not allow teachers to extend their own capacity for improvement through creativity and innovation. The final statement item, C23 – 23.4%, suggested that classroom teachers should take more responsibility in the school's teaching and learning processes.

In analysing the statement items where there was a high level of agreement; that is, above the 75.9% mean, the item C24 – 87.3% related to a focus on student learning. The next highest item C22 – 80.5% promoted effective teaching and the final item C26 – 79.9% indicated a systemic school improvement approach's ability to engage teachers to work collaboratively.

The findings in Appendix G establish a strong overall agreement that teachers build their capacity by concentrating on effective teaching and student learning and working collaboratively with each

other. The questionnaire items indicated that teachers collaborated frequently to critically reflect on their teaching practices to ensure that students engage in deep learning.

Analysis of the disagreements indicated that a systemic school should encourage classroom teachers to be more creative and innovative to be able to research their own practice. There was limited evidence from the questionnaire of few structures and/or opportunities for classroom teachers to reflect on, discuss and challenge their teaching practices to ensure students engage in deep learning.

Appendix H Part C questionnaire collaborative practices

Dimension 2: Building Capacity Collaborative Practices Items 27–38		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 27.	Enables the school Leadership Team to work collaboratively.	179	1.1	6.1	34.1	47.5	7.2	81.6	11.2
C 28.	Facilitates collaborative practices to address education reform.	180	2.2	13.3	45.6	34.4	15.5	80.0	4.4
C 29.	Moves the school community towards the concept of a learning organisation.	180	2.2	7.2	53.3	29.4	9.4	82.7	7.8
C 30.	Creates productive learning teams who share the mission, vision and values.	180	2.8	18.3	52.2	22.8	21.1	75.0	3.9
C 31.	Builds trusting relationships within the school.	180	2.8	25.6	48.3	16.7	28.4	65.0	6.7
C 32.	Focuses on continuous improvement.	180	1.1	3.3	39.4	54.4	4.4	93.8	1.7
C 33.	Emphasis on evidence-based indicators of effectiveness.	179	1.1	6.1	48.6	40.8	7.2	89.4	3.4
C 34.	Encourages teachers to learn from each other.	179	3.4	29.6	41.9	23.5	33.0	65.4	1.7
C 35.	Creates opportunities to reflect on their own teaching practice.	179	1.7	22.3	50.8	22.9	24.0	73.7	2.2
C 36.	Actively encourages teachers to build their own professional learning communities within the school.	179	2.8	31.3	41.3	20.7	34.1	62.0	3.9
C 37.	Promotes teacher collaboration and networking.	180	2.2	23.9	47.8	23.9	26.1	71.7	2.2
C 38.	Creates new ways of thinking about transforming schools to improve student achievement.	179	2.8	13.4	53.1	27.9	16.2	81.0	2.8
	Mean						**18.9**	**76.8**	**4.3**
	Standard Deviation						**10.0**	**9.4**	**2.8**

Appendix H demonstrates that the average aggregated agreement on statement items is 76.8%. Six items have an aggregated agreement greater than 76.8% (C27, C28, C29, C32, C33 and C38). The statement item with the highest aggregated agreement was C32 (93.8%), which focused on collaborative practices being concentrated on continuous improvement. The next highest question item C33 – 89.4% indicated that collaborative practices should use evidence-based indicators. The other three question items C28 – 80.0%, C29 – 82.7% and C38 – 81.0% indicated the importance of collaborative practices for facilitating educational reform or managing change. This was important in enabling the school to adopt the concept of a learning organisation and creating opportunities for

new ways of thinking about transforming schools to improve student achievement. For the final item C27 – 81.6% the perception of participants was that a systemic school improvement enabled the school leadership team to work collaboratively.

Appendix H showed that the mean aggregated disagreement on twelve statement items was 18.9%. Six items (C30, C31, C34, C35, C36 and C37) had aggregated disagreements above the mean of 18.9%. A common perception of these items concerned opportunities for building collaborative practices for teachers. Two items had an aggregate disagreement of 33.0% or higher C34 – 33.0% and C36 – 34.1%. The first (C34) related to collaborative practices that did not encourage teachers to learn from each other, a view paralleling that of item C36 about collaborative practices that did not encourage teachers to build their own professional learning communities within the school. Further to this perception, it indicated that a systemic school improvement did not necessarily build trusting relationships (C31) within the school by promoting teacher collaboration and networking (C37), as well as the creation of teams (C30) and opportunities for reflective practice on their own teaching (C35).

In summary, two distinctive but complementary perceptions emerged. The first was required to create the second. The first perception entailed a vision of a learning organisation with the aim of collaboration, addressing educational reform, building a culture of evidence-informed continuous improvement and a requirement for new thinking to improve student achievement. Schools have effective processes to engage in meaningful and collaborative planning that leads to improvement in teaching and learning.

To enable this to be achieved, according to the second perception there was a need to develop trusting relationships within the school. These relationships created opportunities for collaboration through learning teams and networking within the school and beyond, which would allow teachers to learn from each other.

The findings demonstrated a vision of a school as a learning organisation was beginning to emerge; however, it had not yet developed into a culture with the collaborative practices that underpinned such a learning organisation.

Appendix I Part C questionnaire system leadership

Dimension 2: Building Capacity System Leadership Items 39–41		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement%
C 39.	Creates alignment between classroom, school and system	178	2.2	13.5	53.4	26.4	15.7	79.8	4.5
C 40.	Brings about system-wide improvement in student achievement.	179	2.8	14.5	46.4	26.8	17.3	73.2	9.5
C 41.	Builds professional learning communities across the school system.	179	2.8	25.1	50.8	16.2	27.9	67.0	5.0
	Mean						**20.3**	**73.3**	**6.3**
	Standard Deviation						**5.4**	**5.2**	**2.3**

Appendix I shows that the mean aggregated agreement on the statement items was 73.3%. The item with the highest aggregated agreement was C39 at 79.8%. This suggested that a systemic school improvement approach created alignment between the classrooms, school and system, which one would expect a system approach to do. Item C40 chosen by 73.2% of respondents, recognised system-wide improvement in student achievement. Question item C41 regarding professional learning communities had a high level of aggregate disagreement of 27.9%. This tended to reflect the results from Appendix H, question item C36, on professional learning communities, which had an aggregated disagreement of 34.1%.

The analysis identified if there was an understanding by classroom teachers and school leaders of the concept of system leadership. The average response for, *'I cannot make a valid judgement'*, was 6.3% for this statement item, which supported the notion that system leadership is not clearly understood in schools. Item C 40, with a result of 9.5%, indicated participants could judge whether system-wide improvement brought student achievement.

Appendix J Part C questionnaire use of effective data

Dimension 3: Adaptability for Sustainability Use of Effective Data Items 42–53		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 42.	Effectively monitors student achievement.	178	3.4	20.8	58.4	14.6	24.2	73.0	2.8
C 43.	Encourages a range of sources to generate data.	178	1.1	14.6	53.4	25.3	15.7	78.7	5.6
C 44.	Assists in building a learning culture in the school.	178	2.2	12.4	45.5	38.2	14.6	83.7	1.7
C 45.	Compares our school's current performance with that of previous years.	177	1.7	11.3	48.0	35.6	13.0	83.6	3.4
C 46.	Compares ourselves with our performance with that of like schools.	178	2.8	29.2	35.4	19.1	32.0	54.5*	13.5
C 47.	Builds a culture of transparency and 'no blame'.	177	6.2	22.0	49.2	15.8	28.2	65.0	6.8
C 48.	Gives regular feedback about student achievement.	177	1.7	20.3	54.2	20.3	22.0	74.5	3.4
C 49.	Supports school improvement in our school System.	177	0.6	7.9	53.7	34.5	8.5	88.2	3.4
C 50.	Challenges school improvement in our school.	178	0.6	7.3	52.8	38.2	7.9	91.0	1.1
C 51.	Informs student learning achievement.	178	3.4	12.9	57.9	23.0	16.3	80.9	2.8
C 52.	Gains an understanding of teacher performance.	178	4.5	27.0	50.6	13.5	31.5	64.1	4.5
C 53.	Analyses school performance.	178	1.1	6.7	60.7	27.5	7.8	88.2	3.9
	Mean						**18.5**	**77.1**	**4.4**
	Standard Deviation						**8.5**	**10.8**	**3.1**

Note: *Item two standard deviations above the mean.

Appendix J the mean aggregated agreement on items was 77.1%. Three items indicated a strong level of agreement, but well above the average were question items C49 (88.2%), C50 (91.0%) and C53 (88.2%). A common theme running through these three question items was the effective use of data for analysing school performance that challenged and then supported overall school improvement. A further three items highlighted the importance of using data effectively when drawn from a range of sources (C43 – 78.7%), to analyse trend data within the school (C45 – 83.6%) and to inform student achievement (C51 – 80.9%).

Conversely, there were four statement items (C42 – 24.2%, C46 – 32.0%, C46 – 28.2% and C52 – 31.5%) with levels of disagreement substantially higher than the mean of 18.48%. For three of these items, there was a related theme, this being the absence of comparisons with like schools (C46 – 42%) that, when aligned with C47 (28.2%) reflected an absence of a culture of transparency, giving

rise to not effectively monitoring student achievement (C42 – 24.2%). One other area of disagreement related to not gaining a better understanding of teacher performance (C52 – 31.5%).

One item (C46 – 54.5%) was two standard deviations below the mean, indicating some difference of opinion between this and the other statement items. Item C46 showed 32.0% of respondents disagreed, with 13.5% of respondents also indicated they had insufficient information to be able to decide. These two categories collectively represented 45.5% of respondents. The analysis indicated an absence of schools comparing themselves with the performance of like schools. The availability of data for such comparisons would inform a school improvement approach. The analysis findings indicated strong agreement on the effective use of data that overall supported and challenged school improvement for informing student achievement. The use of data was well embedded in the schools to consistently inform teaching practice and student achievement.

The shortcoming in the effective use of data in a systemic school improvement approach is the need to be available for analysis when comparing like schools and monitoring student achievement. In addition, the use of data was helpful in gaining an understanding of teacher pedagogy, students and their learning and did not just focus solely on student achievement.

Appendix K Part C questionnaire planning for improvement

Dimension 3: Adaptability for Sustainability Planning for Improvement Items 54–66		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 54.	Assists our school to implement the educational change process.	178	2.2	7.3	49.4	38.2	9.5	87.6	2.8
C 55.	Focuses on our school as a place of school improvement.	176	1.1	5.7	48.9	42.6	6.8	91.5	1.7
C 56.	Assists our school leaders to anticipate problems before change is introduced.	175	2.3	22.3	40.0	24.0	24.6	64.0*	11.4
C 57.	Provides our school with a framework for future planning.	174	1.7	4.0	48.9	44.3	5.7	93.2	1.1
C 58.	Helps our teachers to manage innovation and change.	176	4.5	25.0	47.7	19.9	29.5*	67.6	2.8
C 59.	Provides a map for school improvement.	174	0.6	4.0	51.1	40.2	4.6	91.3	4.0
C 60.	Gives the Principal a comprehensive structure for effective instructional leadership.	176	2.8	12.5	42.6	30.1	15.3	72.7	11.9*
C 61.	Provides a clear process of planning for school improvement.	175	0.6	5.7	52.0	39.4	6.3	91.4	2.3
C 62.	Provides a model for strategic planning.	175	1.1	4.6	50.9	41.1	5.7	92.0	2.3
C 63.	Offers a structure to stimulating change for improvement.	176	1.7	11.4	53.4	31.3	13.1	84.7	2.3
C 64.	Enables our school to target initiatives for those outcomes recognised as being below expectation.	176	1.1	5.7	51.7	39.8	6.8	91.5	1.7
C 65.	Enables shared professional reflection and discussion.	173	0.6	10.4	56.6	31.8	11.0	88.4	0.6
C 66.	Enables staff to reflect upon their own roles in accomplishing positive influences on student achievement.	172	1.2	17.4	56.4	23.3	18.6	79.7	1.7
	Mean						**12.1**	**84.3**	**3.6**
	Standard Deviation						**7.6**	**9.7**	**3.5**

Note: *Item two standard deviations above or below the mean.

Appendix K showed strong support for these statement items, with six items having agreement levels above 90.0% (C55 – 91.5%, C57 – 93.2%, C59 – 91.3%, C61 – 91.4%, C62 – 92.0% and C64 – 91.5%). Another three were in the mid-to-high 80% (C54 – 87.6%, C63 – 84.7% and C65 – 88.4%). This level of agreement demonstrates the importance of planning for improvement. The findings showed that a

systemic school improvement approach provided a framework for future planning (C57), a model for strategic planning (C62) and a map for school improvement (C59). Further, additional findings showed that an improvement approach allows for a practice of planning for school improvement (C61) and for educational and structural change (C54 and C63). There was a reasonable level of agreement that planning also provides opportunities for targeted initiatives (C64) and professional reflection (C65).

The highest level of disagreement was C58 – 29.5%, which was significantly above the mean 12.1% by two standard deviations. This was a theme that emerged in C20 (Appendix G) regarding creativity and innovation in building teacher capacity. Another recurring theme was concerning providing the principal with a comprehensive structure for effective instructional leadership (C60 – 15.3%). Appendix K also indicated that item C60 11.9%, could not make a valid judgement, and was two standard deviations below the mean. This finding resonates with C11 (Appendix F) concerning building principal capacity to enable principals to participate in teacher learning and development. Another recurring theme concerning reflective practice is seen in C66 (18.6%), which repeats the participants' perceptions of C35 (Appendix H) regarding collaborative practice in building collective capacity.

Two other complementary items were C56 (24.6%), which was two standard deviations below the mean, concerning school leaders anticipating problems before change was introduced and, C63 (13.1%) where planning did not offer a structure to stimulate change for improvement. Adaptability for sustainability findings in this section can be summarised by concluding that planning for improvement relied comprehensively on creating a culture and practice of improvement and transformation.

Appendix L Part C questionnaire monitoring for continuous improvement

Dimension 3: Adaptability for Sustainability Monitoring for continuous improvement Items 67–77		N	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Aggregate Disagree %	Aggregate Agree %	I cannot make a valid judgement %
C 67.	Provides a set of processes for our school to monitor school improvement.	173	0.6	5.2	56.1	37.0	5.8	93.1	1.2
C 68.	Enables our school to identify and share best practice.	173	1.7	16.2	48.6	32.4	17.9	81.0	1.2
C 69.	Allows our school to pinpoint areas for improvement.	173	1.2	2.9	49.7	44.5	4.1	94.2	1.7
C 70.	Is a tool for our school's accountability for student performance?	174	1.1	5.7	52.3	39.1	6.8	91.4	1.7
C 71.	Provides strategies for internal self-review.	172	2.3	7.6	55.2	32.6	9.9	87.8	2.3
C 72.	Allows for external review of our school's performance.	172	0.6	5.2	50.0	37.8	5.8	87.8	6.4*
C 73.	Empowers our school towards greater ownership of student achievement.	173	1.7	11.0	54.9	30.6	12.7	85.5	1.7
C 74.	Assists our school to understand self-review and external review as complementary.	173	1.7	8.1	55.5	30.6	9.8	86.1	4.0
C 75.	Is at the heart of sustaining school transformation.	173	4.0	23.1	42.8	24.9	27.1*	67.7*	5.2
C 76.	Ensures alignment and coherence for monitoring school improvement.	173	1.7	8.1	52.0	35.3	9.8	87.3	2.9
C 77.	Provides for school improvement sustainability into the future.	173	2.3	5.8	53.2	36.4	8.1	89.6	2.3
	Mean						**10.7**	**86.5**	**2.8**
	Standard Deviation						**6.3**	**6.9**	**1.6**

Note: *Item two standard deviations above or below the mean.

The mean of aggregate agreement is shown in Appendix L is 86.5%. Three statement items had aggregate agreement levels above 90.0% (C67 – 93.1%, C69 – 94.2% and C70 – 91.4%). Another five were in the mid-to-high 80% (C71 – 87.8%, C72 – 87.8, C74 – 86.1%, C76 – 87.3% and C77 – 89.6%). This level of agreement showed strong support for monitoring for improvement. The findings indicate the three highest items allowed schools to pinpoint areas of improvement (C69), provide a set of processes to monitor improvement (C67) and a systemic school improvement approach was a tool for school accountability for student achievement (C70). The high level of agreement for these items suggested these three practices, identifying areas of improvement, monitoring improvement and accountability for student achievements were a priority within the schools. Three items having

80% in the aggregated agreement supports the notion of monitoring for continuous improvement by internal (C71) and external reviews (C72), which were complementary (C74) to each other. The remaining question items with positive agreement related to alignment and coherence as being important in monitoring school improvement (C76), which provided sustainability into the future (C77).

One item, C72, showed 6.4% of respondents indicated a two standard deviation difference regarding external reviews. Such a difference required further investigation when analysing school documents and principal interview transcripts in later chapters.

Three items had levels of aggregate disagreement (C68 – 17.9%, C73 – 12.7% and C75 – 27.1%) and are above the mean aggregate disagreement of 10.7%. The item with the highest aggregate disagreement (C75 – 27.1%) and a difference of two standard deviations, suggested that the improvement approach was not at the heart of sustaining school transformation. The next highest level of disagreement related to schools' inability, through the systemic school improvement, to identify and share best practice within the school (C68). The third statement item related to empowering schools towards greater ownership of student achievement (C73).

The analysis of these eleven statement items revealed positive agreement on nine items (C67, C68, C69, C70, C71, C73, C74, C76, C77) indicating that monitoring for improvement was a practice that occurs within schools. However, respondents conveyed concerns about two items (C68, C75) of the monitoring process given they were two standard deviations from the mean. Item C75 was a high level of concern, which, in itself, is an example of the reflective, monitoring process that a systemic school improvement approach seeks to achieve and therefore requires further investigation.

Appendix M Part D1 Questionnaire Examples for Direction and Purpose (N=107)

Emerging themes	Frequency %	Example
Planning	16.9	"... by providing a scaffold and 'benchmarks' to develop a strategic improvement plan". "Has given us a new direction in our new strategic plan and then onto our annual plan". "Planning in the area of students and their learning on pedagogy resulted in undertaking IDEAS process". "Has given us a new direction in our strategic plan and then onto our annual plan".
Goals	13.0	"Provides goals and targets for improving school performance in the key areas". "Provides staff with the focus for the year and enables them to set realistic goals for themselves as educators". "Setting goals, staff participating in ensuring the goals are met or are worked towards". "A team was formed, trained and had the responsibility of setting school wide goals within the annual plan to deepen our understanding and functionality of student data".
Collaboration	10.3	"Encouraged collaboration within departments and across KLA's". "…directs movement to collaboration across the school". "Given us a clearer mandate for collaborative student centred initiatives". "Provides a meaningful focus that is a result of collaboration between staff at all levels".
Students Diverse Needs	9.5	"It focuses the school on targeting particular areas of improvement that will benefit student achievement". "In setting up special programs to enhance student achievement …" "We have been able to create a cohesive focus on improving our provision of gifted education over the years where previously we had none". "A focus on meeting the diverse needs of students has been developed through our targeting …". "Special needs students and gifted and talented students are considered".
Teaching & Learning Focus	8.4	"Allowing for greater focus on teaching and learning framework". "Movement away from textbooks and exercise books to online resources and use of digital to do most tasks". "Targeting literacy and numeracy intervention it provides for learning team to implement change in a school".
Internal Reflective Practices	6.5	"By giving the school community a chance for self-reflection". "It makes schools take time to pause, reflect and plan". "… provides a forum for reflection, monitoring and evaluation". "Ability to stop think reflect and plan in a strategic way".
External Review	6.5	"Cyclic Review in my first year as principal was great way to establish strengths and areas for improvement". "Cyclic review allows for affirmation for the past and a rethink for the next few years". "Cyclic review brought about questions around data analysis, measuring student performance and possible strategies to improve".
Vision/Mission	4.7	"The framework has set up processes to develop a College mission and vision statement". "…ensuring the focus remains linked between CEO Vision and the schools". "It provides the College with a long term vision and mission".
Personal, Performance and Planning Review (PPPR)	4.7	"This helps teachers in their PPPR (goal setting) and ensures our community is aligned in its strategic direction". "Assists in PPPR process and provides structure and relevance when related to AIP". "Built into PPPR process".
Data Driven Evidence	2.8	"Data is used to try to target strategies, PD and ways to improve in these areas and for the whole school". "Data analysis is a main driver in SRI".
Improvement	2.8	"Improvement of school and parish relationships". "…allowed us to focus on the processes for monitoring and tracking student achievement".
School Leadership	1.8	"The process forces the leadership team to have a plan 'School Focus' and targeted Key Improvements for each year".
Other Individual Example(s)	9.3	"It allows us to see where we are going".
It hasn't Example(s)	2.8	"It hasn't". "It hasn't really influenced the direction or purpose of the school to this point".
TOTAL	**100**	

Appendix N Part D2 Questionnaire Examples for Build Capacity (N=98)

Category	Frequency %	Examples
Professional Learning	18.4	"Focus on professional learning". "It gives direction to professional learning within the school and outlines what knowledge and content or up skilling teachers need". "Continued professional development opportunities especially in response to the introduction of the Newman stream". "Continued training of staff in the area of differentiated learning".
Building Teacher Capacity	14.3	"A significant benefit of the framework lies in its ability to facilitate explicit opportunities to build teacher capacity which in turn builds student capacity". "Greater teacher involvement in planning and evaluating significant projects implemented in the year". "..directly builds teacher capacity to explicitly teach literacy in classrooms". "Has assisted in developing the capacity of staff in UbD and ESL strategies".
Collaboration	11.2	"An example of this is the collaborative process of SRI that is held in our College, a process where all are involved in determining levels and hence become familiar with not the language but the direction and achievement of the College". "In our collaborative groups the discussion has led to sharing different ideas that have become common practice across the school". "Greater teacher involvement in planning and evaluating significant projects implemented in the year".
School Leadership	11.2	"Therefore each Executive member had an identified Key Area that they oversaw and were responsible for taking forward with the stakeholders". "Studies Coordinators using the schools AIP to develop an AIP for their KLA".
Teaching & Learning	9.1	"A focus area in the SIP and AIP in gifted education, specifically the College's involvement in the Newman Stream Research Project". "…directly builds teacher capacity to explicitly teach literacy in classrooms". "…to lead thinking and planning in relation to the strategic goal for Pedagogy/Teaching and Learning within the school". "Focus on differentiated learning".
Personal, Performance and Planning Review (PPPR)	7.1	"AIP becomes part of the PPPR process and people belong to groups that develop strategies to develop improvement". "…by embedding the AIP in PPPR processes has seen a number of staff move into senior and middle management positions both inside and outside of the school". "It is integrated into every teacher's PPPR".
Data Driven Evidence	5.1	"Data to record student progress and achievements for all teachers to access". "I think schools are much more data literate". "The data is showing us that this is positively affecting the teaching in the classroom and also their academic performance in assessment tasks".
Empowerment	4.0	"…more people are empowered to learn". "Staff nominates to be part of committees that will drive the improvement in that area. Some staff is given leadership roles in this process".
Mentoring	3.1	"Staff mentoring and Dept's working together to improve upon last years' results, highlighting key learning examples/models, student learning styles and identifying with current students and how learning can be tailored to suit individual needs". "Experienced staff mentoring of beginning teachers in my KLA". "Setting up of mentoring groups and study groups to allow students to achieve their best".
Culture	3.1	"The collaborative ownership has facilitated, or at least contributed to, a culture for building the capacity of all". "… creating a culture of achievement". "…promotes a culture of change".
Other Individual Example(s)	9.4	"Used to apply for Youth Ministry Funding Grant, pinpointing a purpose and goal for this project".
It hasn't Example(s)	4.0	"I really do not think that it has, except that the Leadership Team probably understand it a little better".
TOTAL	**100**	

Appendix O Part D3 Questionnaire Examples Capacity Building Teams and Faculties (N=97)

Category	Frequency %	Examples
Collaboration	17.5	"College executive and subject coordinators have worked collaboratively to identify ways to improve student achievement." "Working collaboratively with KLAs both at our school and other schools to develop programs for new curriculum." "Our focus on collaboration has meant that KLA teams and subject teams have connected and learned from each other in many forums." "Professional dialogue and collaboration have become a feature of the way the school teams/faculties function."
Teaching & Learning Focus	15.5	"Focus on literacy skill building specific to individual KLAs for use in teaching programs." "Share of best practice and cross curricular assessments." "… has enabled us to identify areas in the whole school that need improvement and all faculties are on board with annual Action Research Projects that focus on goals." "KLA teams have discussed ways in which SRI framework impacts on teaching."
Professional Learning	11.4	"Professional development is promoted and fostered to ensure continuous improvement." "Staff in-services and workshops on creative 21st century learning." "AIPs are often brought to life by professional learning teams with responsibility for specific strategies." "Faculties have taken aspects of this professional learning or similar approaches and further developed and applied them in their departments."
Leadership	10.3	"Middle managers are then empowered to lead at a faculty-level initiatives that align to our strategic directions." "Creating a sense of shared responsibility for Religious Education/Faith/Catholic Life and culture across the KLAs, across all staff, it is a shared mission." "… KLA and Year-level teams have been expected to complete their own faculty or pastoral AIP with their staff in that team. This creates a shared level of meaning and ownership for why we are doing what we are doing and a clear direction to how we plan on achieving it."
Planning together	10.3	"Each year the KLA coordinators set a strategic plan for their faculties and SRI to inform them." "Each year KLA coordinator set a strategic plan for their faculties and SRI to inform them." "… enables teams and faculties to plan together it also gives team leaders direction and responsibility for successful learning together with accountability." "Much has been done in the area of collaborative planning; teachers are now comfortable in collaborative planning."
Goals	7.2	"Clear goals for teams to strive towards meeting." "Coordinators create goals annually that reflect school goals from the SRI framework." "Faculties being able to set KLA-based goals that align and assist with school goals."
Building Middle Leaders Capacity	6.2	"The framework helped us to identify the need to build the capacity of our Year Coordinators. We have worked with Year Coordinators to form a Pastoral leadership team. The framework was used to identify the need for assistant coordinators and to provide professional development to build their leadership capacity to work collaboratively as a team."
External Review	3.0	"Cyclic review recommendations assist schools in identifying where capacity building is needed." "The challenge of the Cyclic review, and presenting to the panel, helped build capacity of each Executive member." "Through the Cyclic review process the preparation of the self-review statement built the capacity of the Leadership Team to run staff, parent and focus groups to identify areas of strength and challenge in the school."
Data informed	3.0	"Constant use of data to inform teaching practice and assessment." "It is data-driven, and hence there has been evidence backing the direction of leading educational change within the school in this area." "… using data to inform teaching and learning within the cycle of compliance."
Reflection on practice	2.0	"By reflecting on SC and HSC results we were able as KLAs to reflect on best practice and ways that best help students to learn, and improve on as well as share these processes." "Faculties work together on the final SRI reflection at the end of each year – this collaborative reflection on the faculty's effectiveness and evidence of this is a strengthening tool for further improvement."
OTHER INDIVIDUAL EXAMPLE(S)	4.4	"The framework is often rather complex and far too detailed to get to the classroom level."
IT HASN'T EXAMPLE(S)	7.2	"I do not think it has." "I have not witnessed that come to fruition yet." "I have not observed these happening, only individuals."
TOTAL	**100%**	

Appendix P Part D4 Questionnaire Examples for Adapting to Educational Change (N=96)

Category	Frequency %	Examples
Teaching & Learning	25.0	"…ensures a targeted, well aligned vision for ensuring that students remain at the heart of what we do in schools." "Focus on diverse learning." "Has assisted in the implementation of the Australian Curriculum by providing structure and a clear pathway for the development of programs and resources." "Learning more about differentiated learning." "Teaching and learning, programs and assessment, knowing your learners." "The College library is, now, a vibrant teaching/learning centre." "We have had a strong emphasis on literacy which has been adapted in syllabus and classroom teaching practice."
Innovation through technology	21.8	"… has helped the College adapt to educational change by providing direction for this change. Examples of significant change include the focus on innovation and technology in the classroom, student centred learning, Australian Curriculum implementation." "Access and implementation of technology and PBL across stage 4." "E-learning." "Encouraging staff to develop strategies to implement student centred learning especially in the use of ICT." "… supports the integration of technology of learning with authentic reflection of pedagogical practice."
Data driven evidence	7.3	"… allows evaluation and review, this data allows for planning for improvement or to revisit an area to change strategies in this area to improve student learning." "The leadership team are looking to provide an evidence base or data to support the key improvements, goals and strategies that underpin our key strategic planning documents." "It is being data-driven, and hence there has been evidence backing the direction of leading educational change within the school in this area."
Planning	7.3	"… is a vehicle for schools to plan out a change process." "In the establishment of a new school it assisted in planning priorities – what areas required immediate attention and others that could be addressed afterwards." "It allows us to see the future strategic direction being made."
Internal reflection on practices	5.2	"By having the staff review school agenda on the common scale it opened up the agenda for change within the staff." "Reflection on our success at achieving goals specific to the SRI and reflecting on how we do things enables us to develop new areas of challenge and hence adapt to educational change as the cyclic review happens."
Alignment	4.1	"... ensures whole school improvement strategies incorporated into the AIP are in line with system and/or National requirements." "… aligned with the SIP, was a focus on the AIP and resulted in a whole-school approach to reviewing our assessment processes. The result is a deeper form of assessment of learning."
Culture	3.1	"… has supported our school improvement and the building of culture so well in its introduction, it is now second nature". ".. we now recognise our culture of building towards excellence and that educational change is fundamental to this." "… provided a framework for the improvement in the learning culture in the school."
Collaboration	3.1	"The annual review of components has meant staff has regularly been involved in a review process through consultation." "It has created space for conversation." "Provided the opportunity to collaborate with other schools."
External Review	3.1	"Data gathering for the Cyclic Review helped identify the need to focus on metacognition, and develop ways to address." "Our school was made aware of the Cyclic Review Process and how we reflected on the outcome of this to inform us what key areas need more support and growth in the school."
Research	2.0	"Creates a means to introduce the latest research into pedagogy." "It provides a framework for leadership teams to research best practice and plan for its implementation."
Can't give an example	5.6	"I cannot think of one."
Other Individual Example(s)	6.2	"Making teachers aware of change and allowing time to adapt to these changes." "Setting SMART goals."
It hasn't Example(s)	6.2	"I do not think it has." "I have not observed this happening."
TOTAL	**100%**	

Appendix Q Part D5 Questionnaire Examples For Sustained Continuous

Category	Frequency %	Examples
Data driven evidence	17.5	"Identifying areas of improvement for student achievement through data analysis." "Analysis of responses to annual ratings provides information of achievements and other areas to address, so that improvement is continuous." "Consistent use of data to inform teaching practice and assessment." "HSC learning gain has been consistently above expectation for a number of years."
Internal reflection on practice	15.5	"Evaluation of everything that we do to judge its effectiveness and value." "Culture of self-assessment and improvement has developed." "The annual evaluation encourages reflective practice. By ensuring all staff have a voice it allowed the Leadership Team to see if a difference was only planned at the 'top' and whether it filtered down to impact the teaching and learning in the classroom." "Evaluation of everything that we do to judge its effectiveness and value."
Teaching & Learning	14.6	"Accelerated programs in mathematics have been a direct result of the drive for continuous improvement across faculties." "Literacy and numeracy programs driven by an ESL pedagogy and differentiated delivery of the curriculum."
Learning Culture	9.7	"Reviewing the learning culture of the College." "Creating and sustaining an effective learning culture through professional development of staff, setting high expectations of staff and students and promoting self-directed learning." "Building the learning culture of the college based on various strategies implemented, and ultimately knowing our students from year to year to see student improvement and achievement."
Planning	7.8	"… guides thinking into the Strategic Plan, it in effect contributes to the sustainability of our planning." "Lots of meeting to share student's results and work with each other planning for the future."
Goals	3.9	"Allows smaller, achievable steps towards a larger goal to be taken, which is less overwhelming." "Our current SIP, which has a three-year life commencing in 2014, has been set with goals spanning three years."
Build Staff Capacity	3.9	"Giving direction to leadership team to build capacity of teachers having coordinators to drive change and collaboratively plan for students with diverse learning needs build teacher confidence in an area through professional learning."
Other Individual Example(s)	23.2	"It has highlighted and identified the areas that the College needs to work on for improvement."
It hasn't Example(s)	3.9	"I cannot think of one." "It hasn't." "There is little evidence of 'continuous improvement' at the school."
TOTAL	**100%**	

Appendix R Overview of Key Areas and Components

Key Priorities	Associated Components code
1. Catholic life and religious education	C1 1.1 Vision and mission C2 1.2 Religious education C3 1.3 Catholic life and culture C4 1.4 Parents, parishes and the broader Church
2. Students and their learning	C5 2.1 Educational potential C6 2.2 Rights and responsibilities C7 2.3 Reporting student progress and achievement C8 2.4 E-learning C9 2.5 Pastoral care and well-being
3. Pedagogy	C10 3.1 Curriculum C11 3.2 Diversity of learners C12 3.3 Teaching practice C13 3.4 Planning, programming and evaluation C14 3.5 Assessment C15 3.6 Learning culture C16 3.7 Professional learning
4. Human resources	C17 4.1 Recruitment, selection and retention of staff C18 4.2 Staff professional development C19 4.3 Ethical workplace culture C20 4.4 Building leadership capacity C21 4.5 Accountabilities and compliance
5. Resources, finance and facilities	C22 5.1 Resourcing of learning C23 5.2 Plant and facilities C24 5.3 Environmental stewardship C25 5.4 Financial management
6. Parents and partnerships	C26 6.1 Parent engagement C27 6.2 Consultation and communication C28 6.3 Engagement with the wider community
7. Strategic leadership and management	C29 7.1 Strategic leadership C30 7.2 Culture of improvement and transformation
8. Information communication technologies (ICT)	C31 8.1 ICT planning and support C32 8.2 Reliable and sustainable infrastructure C33 8.3 Information management
Total Components:	

Source: Metropolitan Catholic School system, 2011, *How Effective is our Catholic School?*

Appendix S Overview of Annual Evaluations of Components

Associated Components Codes	R1G1 (Hlg)	R1B1 (Hlg)	R2C1 (Hlg)	R1G2 (Llg)	R1B2 (Llg)	R2C2 (Llg)
C1 1.1 Vision and mission	2009 (5)	2011 (6)	2010 (5) 2012 (6)	2012 (6)	2012 (6) 2013 (1)	2008 (7) 2009 (7) 2010 (6/7) 2011 (4)
C2 1.2 Religious education	2006 (5)		2007 (5) 2010 (5) 2011 (5) 2013 (4)			2009 (6) 2010 (6) 2011 (5) 2012 (6)
C3 1.3 Catholic life and culture	2007 (6)	2011 (6)		2011 (6)	2013 (5)	2009 (5) 2010 (5) 2011 (6) 2012 (6)
C4 1.4 Parents, parishes and the broader Church	2008 (5)		2008 (5) 2010 (5)	2013 (6)		2009 (5) 2010 (5)
C5 2.1 Educational potential	2007 (5)	2011 (6)	2007 (5) 2008 (5) 2011 (5)		2011 (5) 2012 (5)	2010 (5/6) 2011 (5) 2012 (5)
C6 2.2 Rights and responsibilities	2008 (5)		2010 (5)		2013 (5)	2009 (6) 2010 (5)
C7 2.3 Reporting student progress and achievement	2006 (4)		2009 (5)	2012 (4) 2013 (5)	2013 (5)	2009 (5) 2010 (5)
C8 E-learning	2010 (5)		2009 (5) 2010 (5) 2011 (4)	2011 (6) 2012 (4) 2013 (5)	2011 (5) 20-12 (5)	2008 (5) 2009 (5) 2011 (4) 2012 (4)
C8 2.5 Pastoral care and well-being	2009 (5)	2012 (4)	2007 (5) 2008 (5) 2012 (6) 2013 (4)		2013 (5)	2009 (4) 2010 (4) 2011 (5) 2012 (5)
C10 3.1 Curriculum	2010 (5)		2008 (5) 2013 (5)		2013 (5)	2010 (5) 2011 (5) 2012 (5)
C11 3.2 Diversity of learners	2006 (4)		2009 (6) 2010 (5)	2013 (5)	2011 (5) 2012 (5) 2013 (5)	2009 (5) 2010 (4) 2011 (4) 2012 (5)
C12 3.3 Teaching practice	2008 (5)	2011 (5)	2007 (5) 2008 (5)	2011 (5)	2011 (5) 2012 (5) 2013 (5)	2010 (5) 2011 (4) 2012 (5)
C13 3.4 Planning, programming and evaluation	2007 (5)		2009 (5) 2012 "(5) 2013 (5)			2009 (5) 2010 (5) 2011 (5) 2012 (5)
C14 3.5 Assessment	2007 (5) 2010 (5)		2011 (5)		2013 (4)	2009 (6) 2010 (6)
C15 3.6 Learning culture	2009 (5)			2012 (5) 2013 (5)		2008 (6)
C16 3.7 Professional learning	2007 (5)	2012 (5)	2009 (5) 2012 (4)	2011 (5)		
C17 4.1 Recruitment, selection and retention of staff	2008 (4)				2013 (6)	2010 (6)
C18 4.2 Staff professional development	2006 (4)		2008 (5) 2009 (5) 2010 (5)	2012 (5)	2013 (6)	2009 (6) 2010 (5) 2011 (5) 2012 (5)
C19 4.3 Ethical workplace culture	2009 (4)					2008 (5) 2009 (5/6) 2010 (6) 2011 (5) 2012 (5)

Associated Components Codes	R1G1 (Hlg)	R1B1 (Hlg)	R2C1 (Hlg)	R1G2 (Llg)	R1B2 (Llg)	R2C2 (Llg)
C20 4.4 Building leadership capacity	2010 (5)					2010 (5) 2011 (5) 2012 (5)
C21 4.5 Accountabilities and compliance	2007 (4)		2013 (4)			2009 (5) 2010 (5)
C22 5.1 Resourcing of learning	2007 (4)		2007 (5) 2010 (5)		2011 (5) 2012 (5)	2008 (5/6) 2009 (5/6) 2010 (5/6) 2011 (5) 2012 (6)
C23 5.2 Plant and facilities	2008 (6)	2012 (4)			2011 (5) 2012 (5) 2013 (6)	2010 (6) 2011 (5) 2012 (5)
C24 5.3 Environmental stewardship	2007 (4)		2008 (4) 2009 (5)			2012 (4) 2009 (4) 2010 (6)
C25 5.4 Financial management	2007 (5)	2011 (5)				2008 (6) 2009 (6) 2010 (6)
C26 6.1 Parent engagement	2010 (6)		2007 (5) 2011 (5)	2011 (5)	2011 (4)	2010 (6) 2011 (6) 2012 (4)
C26 6.2 Consultation and communication	2007 (5)	2012 (5)		2011 (6)	2013 (4)	2008 (5) 2009 (5) 2010 (5) 2011 (5) 2012 (5)
C28 6.3 Engagement with the wider community	2008 (6)		2010 (6)	2011 (6) 2012 (5) 2013 (6)	2013 (5)	2008 (5) 2009 (5) 2010 (5) 2011 (6) 2012 (6)
C29 7.1 Strategic leadership	2009 (4)	2011 (5)	2009 (6) 2010 (5) 2013 (5)	2011 (6) 2013 (5)	2013 (5) 2013 (6)	2008 (6) 2009 (6) 2010 (6)
C30 7.2 Culture of improvement and transformation	2010 (5)		2007 (5)			
C31 8.1 ICT planning and support			2012 (5)	2012 (5)		2011 (4) 2012 (5)
C32 8.2 Reliable and sustainable infrastructure					2013 (2)	2011 (5) 2012 (5)
C33 8.3 Information management				2013 (6)	2013 (5)	2011 (5) 2012 (4)

Note: 2009 (5) = Year (rating out of 7)

Appendix T Examples of Direction and Purpose in High Learning Gain (HLG) Schools

Theme	School	Aggregated Frequency	Example
Vision/ Mission	R1G1 R2C1 R1B1	12	"… the first part of that was to look at our vision and mission. So that's where we started – not looking at what we particularly had to improve or not improve, or the challenges and the things that were going well (R1G1)." "Well, I would say our vision, we've all got a vision and mission. It's very consistent with what the system one is, but also it's got to be contextualised (R2C1)." "You almost need that vision to be prepared by the end of Term 3, Term 4, because schools are planning for the following year, introduces the theme for the following years, in many ways it's too late because schools have already set their direction (R1B1)."
Moral Purpose	R1G1 R1B1	8	"So there was a shared moral purpose between everybody as to what Catholic schools are about, but within our particular context (R1G1)." "If staff don't see the purpose or don't believe in it, they might carry out what's required, but because of lack of dedication, you don't see the same results I think coming through, because they haven't had the same buy-in to make it work (R1B1)."
Alignment	R1G1 R1B1	6	"I think it gives great direction and purpose. Certainly, a with the systematic school improvement strategy there was a great alignment between that and what we then did with our own strategic plan. So as a system of schools it's important to have a system direction that we can then align. So there was great connection there (R1G1)." "I think when the particular school improvement set by Diocese aligned better with what the school needed, then greater success as seen, and I think, in areas where there's more flexibility to implement the particular improvements in a way that suited the needs of your school, it was more successful (R1B1)."
Goals	R2C1 R1B1	4	"… filters down to the goals of the executive, the goals of the middle managers and then the teachers' goals as well (R2C1)." "… they see it as important, they'll carry it through and it can still achieve its end because they remain committed to the goal that had to be achieved (R1B1)."
Priorities	R2C1	2	"… specifically it provides the priority areas themselves, how we develop our whole-school approach to improvement (R2C1)." "It gives greater direction and purpose to the school because, as I said, it provides the priorities that we work from (R2C1)."

Appendix U Examples For Build Capacity In High Learning Gain (HLG) Schools

Theme	School	Aggregated Frequency	Example
Collaboration	R1G1 R2C1 R1B1	15	"So it's that collaboration, the consultation, being part of it – the agreement of understanding and agreement of we're all going to use this same language (R1G1)." "… it's around collaboration, it's around learning, it's around mentoring, it's around peer observation in the classroom. It's an absolute priority now; it's integrated into everything that we do (R2C1)." "… we decided to have a building collective capacity initiative, and it was targeted at a particular area. In this case it was student assessment and improvement … (R1B1)."
Teacher Capacity	R1G1 R2C1 R1B1	14	"So in using the strategy, you're building the capacity of your staff to see the bigger picture of school improvement (R1G1)." "Then of course once you get into the classroom its teacher leadership (R2C1)." "So the more that the teacher feels – not engaged, but more that I'm the one who needs to take charge of this, I think it is more successful, rather than told to do it (R1B1)." "… When individual teachers were involved, the more they're committed to it, then the greater success you have (R1B1)."
Leadership	R1G1 R2C1 R1B1	10	"Certainly in working through those sorts of processes and structures you're building the capacity of your leadership team to run focus groups, delve into the information from each of your stakeholders, and then that bigger thinking supposed to see, well what the next direction for our school is? (R1G1)." "… members of our leadership team have got their own area of responsibility and, as I said, that filters down through leadership to the middle managers (R2C1)." "… sometimes involve more than one leadership team member …(R1B1)."
Professional Learning	R1G1 R2C1 R1B1	9	"Oh, it's the development of your staff, in professional learning … (R1G1)." "An example would be that there's very much a focus on professional learning. This year the structure has been focused on authentic learning (R2C1)." "… we've started to educate our staff that the improvement they want to receive for the school, for their students and for themselves need to in some way link back to an AITSL Standard (R1B1)."
Coordinator Capacity	R1G1 R2C1 R1B1	5	"… student well-being – we had a pastoral co-ordinator who worked with year coordinators, counsellor, family liaison, who then supported that well-being side. So there were teams of people with someone having a main carriage within their role of those three areas (R1G1)." "Well it's a bit distributive to the extent that I take overall responsibility for it (R2C1)." "… it's normally at the middle management level where things have been carried out practically (R1B1)."

Appendix V Examples For Adaptability For Sustainability In High Learning Gain (HLG) Schools

Theme	School	Aggregated Frequency	Example
Data	R1G1 R2C1 R1B1	11	"Well, you're specially looking at the data is very interesting, because you can look at an overall, or you can get particular NAPLAN and HSC data, and get right down into the nitty gritty of questions (R1G1)." "There is a real extensive use of data now with the idea that if you use the data to know your learner and to know your kids, therefore that then helps you develop the practices, that means that you're going to get really good outcomes in terms of learning for kids. So data, I think, is absolutely crucial (R2C1)." "So the data is used absolutely in the planning and then again in the monitoring, combined with our own information …(R1B2)."
Continuous Improvement	R1G1 R2C1 R1B1	7	"So you can drill right down to help develop programs for where the need is in your school, to then improve access to something for students, which helps sustain that improvement in your school (R1G1)." "I certainly believe that any improvement in sustainability is an incredibly important part of any improvement that you make, so you've got to once again set up the structures and your processes to do that (R2C1)." "… there would generally be a check-in procedure throughout the year, two or three times a year, to see where we're at with regard to the particular objective (R1B1)."
Collaboration	R1G1 R2C1 R1B1	6	"So it's that collaboration, the consultation, being part of it, the agreement of understanding and agreement of we're all going to use this same language, this similar approach (R1G1)." "So we work together on those priorities and then at the end of the year look back again and say yes, okay, well what happened was slightly different from what we planned, but hang on, we've done this, this and this, this is good (R2C1)." "… providing more collaborative possibilities with students and staff sharing documents and being able to work on more than one thing at the same time, I think has allowed sustainability because the strategy can be adaptable (R1B1)."
Planning	R1G1 R1B1	5	"Schools can see a direction from the system, and as a principal you work with your staff and your students, looking at where your future is in that strategic plan, and it's really the principal with the team that then sustains that I think in looking at continuous improvement. It's always on the agenda (R1G1)." "I think, number one is planning and knowing what you have to achieve (R1B1)".
Educational Change	R1B1	4	"Often you don't see a lot of change in three or six months. You would hope to see a change in a year, and if you didn't, then maybe what you've done either hasn't succeeded or wasn't carried out properly (R1B1)."

Appendix W Examples for Direction and Purpose in Low Learning Gain (LLG) Schools

Theme	School	Aggregated Frequency	Example
Alignment	R1G2 R2C2 R1B2	12	"So I see the system strategic plan and the school strategic plan need to walk alongside one another. That doesn't mean that your school doesn't have its own needs – absolutely important (R1G2)." "The key practices and implementation really need to be the alignment of the work of the executive with the alignment of the work of the staff (R2C2)." "I see an alignment between what we want to achieve. It's embedded in research of course. It's been communicated. We have an understanding of the policies and the processes, both internally with their own school, guided and informed by the systemic school improvement strategy (R1B2)."
Moral Purpose	R1B2 R2C2 R1B2	10	"Definitely. The systemic school improvement strategy does influence our school's student achievement, for a number of reasons. One is just in the word itself; improvement implies a growth … (R1B2)." "… it gives greater purpose in the sense that it provides a scaffold, a framework, a requirement, which should never be left to any one school to decide whether they're going to have school improvement (R2C2)." "So we're always looking through the lens of student improvement and student engagement, and then how that manifested in student is results both internally here at school, in terms of their assessments and exams, but also in external measurements such as NAPLAN and HSC (R1B2)."
Goals	R1G2 R2C2 R1B2	6	"The way we operate at our school is that the team has an understanding of all of the goals and the direction (R1G2)." "I see it on a continuum that has been a positive step forward. While it's a lot of work, I feel like it is our goals are being more aligned (R2C2)." "We ensure that the goals that we've identified and that can be measured are put in place, and course the strategic actions are devised leading into the year to try and achieve those key improvements (R1B2)."
Vision/Mission	R2C2	3	"… the preparation of that plan was very much about remodelling, augmenting the existing vision and mission statement, really the mission statement.' (R2C2) 'You're not going to be able to connect a systemic vision and mission if people can't see it being applicable to what they have to do in their school (R2C2)."
Leadership	R2G2	3	"It's a bit of a distributive leadership, but it's very much a shared approach, yes (R1G2)."

Appendix X Examples for Build Capacity in Low Learning Gain (LLG) Schools

Theme	School	Aggregated Frequency	Example
Teacher Capacity	R1B2	23	"So it's about teacher capacity, and I think we're well supported in that, and it lies at the centre of the school improvement strategy. I mean, if you improve your teachers, you'll improve the learning (R1B2)." "We are constantly urging our staff to have an open learning mind, because the world is changing, the way students learn in changing, the influence of technology, we need to move with the times, we need to be contemporary in our view (R1B2)."
Collaboration	R1B2 R2C2	10	"… our commitment to their capacity building is that they need to be exposed to other opportunities of consultation, collaboration and questioning practice that may appear to be of impact, but perhaps the data is telling us differently, so learning from others (R1B2)." "The key practices are first of all in initial stages of a new strategic improvement plan, so a lot of collaboration around looking at the past strategic improvement plan and how … the school wants to see it move forward (R2C2)."
Leadership	R1B2 R2C2 R1G2	6	"My role as principal is to ensure their focus with their teams, such as, the KLA coordinators, house coordinators, our pastoral people and various groups, focus on achieving the goals that we measure, which simply comes back to student learning gain in those key improvements (R1B2)." "The AIP is divided into core responsibility to various members of the executive (R2C2)." "So in my role (principal) I lead discussion and dialogue with the leadership team. So I suppose I provide the professional development for the team (R1G2)."
Coordinator Capacity	R1B1 R1B1	5	"… provides a framework and a conversation that we bring back to the school, to get that consistency across KLAs, so that we can develop and continue to develop our whole school wide pedagogy … (R1B2)." "… we're connecting leaders to system leadership, because they're seeing what the whole of system focus is … (R1B2)."
Professional Learning	R1G2	4	"I think the other thing was assuming that all leaders had the capacity themselves to develop the capacity in others. So now what I'm seeing is that they've recognised that and so they're providing professional development at principal and AP level as to how do you develop capacity in others (R1G2)." "… aligning the professional development they were doing too that – what they had identified (R1G2)."

Appendix Y Examples for Adaptability for Sustainability in Low Learning Gain (LLG) Schools

Theme	School	Aggregated Frequency	Example
Data	R1B2 R2C2 R1G2	19	"So we're using data gathered to the set action plans for literacy and behaviour modification that again are the responsibility of the members of the executive (R1B2)." "… I think it also provides a framework for us to gather out own data more effectively, more learnedly, if you like, and therefore identifying those areas of concern to build on (R1B2)." "I think probably the use of data is a strong point of the strategy. There's plenty available (R2C2)." "We use; well we've got a real focus on using data here at the school … So our staff has had a lot of professional development in how to use data to inform their teaching practice (R1G2)."
Planning	R1B2 R2C2 R1G2	7	"So the data is used absolutely in the planning and then again in the monitoring, combined with our own information that we gather …. (R1B2)." "I've always found that the process, in terms of strategic thinking, strategic planning and strategic implementation; it's made a lot of sense to me (R1B2)." "Data is used in the initial evidence gathering for any change or for subsequent strategic improvement plans and annual plans. It is used extensively and in some depth (R2C2)." "So I see the system plan and the school strategic plan, and they need to walk alongside one another (R1G2)."
Culture	R1B2 R2C2 R1G2	6	"… what we're talking about in sustainability is a growing learning culture that the students get this understanding now in a world that's full of distractions for them that the priority has to be their learning, and from their learning comes their well-being, and you don't separate the two, but that to me is where the sustainability is (R1B2)." "My interest and the interest of the staff is to enable every child to achieve their potential (R2C2)." "It comes down to the learning culture in your school and what sort of learning culture you have and the pedagogy that's being taught in the classroom.' (R1G2)
Continuous Improvement	R1B2 R2C2	6	"The continuous improvement in the school has to come from a capacity building within the teachers (R1B2)." "… the strategy sustains continuous improvement in this school because of the challenge and the support of the teachers and the way that they have to be able to demonstrate it in their professional learning log (R1B2)." "Our continuous improvement is about learning (R2C2)."
Educational Change	R1B2 R2C2	4	"I do believe that the improvement strategy has helped us here adapt to educational changes in our school, primarily because this school's undergone a monumental change in the last five to six years (R1B2)." "… the evidence I would cite would be if you look back through a timeline of both strategic improvement plans and annual improvement plans, you would notice a significant difference. So, I would say it does help you adapt to educational changes (R2C2)." "… I think that it definitely has a focus on key areas that are across the globe to do with educational change. So, for example, your focus around literacy and numeracy (R1G2)."

Appendix Z Summary of What Works and Does Not Work Well with a Systemic School Improvement Strategy

Salient Dimension	What works well	What does not work well
Direction and Purpose	• Give school direction towards improving student achievement. • Fosters a shared moral purpose in the school. • Connects the school with the school Vision. • Focuses on student achievement. • Encourage schools to set high standards.	• Connecting the classroom with the school's vision. • Enabling schools to live out the school system's vision. • Focusing on narrowing the gap in student learning.
Capacity Building	• Help Principals to establish strategic goals within the school. • Allows Principals to promote a focus on teaching and learning improvement. • Enables Principals to focus on continuous school improvement. • Emphasises for Principals the need for a school culture of success. • Supports Principals to focus on strategic resource allocation within the school. • Focuses on student learning. • Promotes effective teaching practice. • Engages teachers in working collaboratively. • Focus on continuous improvement. • Emphasis on evidence-based indicators of effectiveness. • Moves school community towards the concept of a learning organisation. • Enables the school Leadership Team to work collaboratively. • Creates new ways of thinking about transforming schools to improve student achievement. • Create an alignment between classroom, school and system. • Bring about system-wide improvement in student achievement.	• Allowing Principals to sustain student learning and achievement. • Enabling Principals to participate in teacher learning and development. • Enabling Principals to create a supportive environment for all staff. • Allowing teachers to extend their own capacity for improvement through creativity and innovation. • Enabling teachers to research their practice. • Giving teachers more responsibility for the school's teaching and learning process. • Promoting teacher leadership as a shared responsibility between the Principal and teachers. • Creating productive learning teams who share the mission, vision and values. • Building trusting relationships within the school. • Encouraging teachers to learn from each other. • Actively encouraging teachers to build their own professional learning communities within the school. • Promoting teacher collaboration and networking. • Building professional learning communities across the school system. • Connecting leaders to system leadership.
Adaptability for Sustainability	• Challenges school improvement in the school. • Support school improvement in the school system. • Analyses school performance. • Assist in building a learning culture in the school. • Compares school current performance with that of previous years. • Inform student learning achievement. • Provides a school with a framework for future planning. • Provides a model for strategic planning. • Create a model for strategic planning. • Provides a clear process of planning for school improvement. • Enables schools to target initiatives for those outcomes recognised as being below expectation. • Provides a map for school improvement. • Provides a set of processes for schools to monitor improvement. • Allows schools to pinpoint areas for improvement. • Offers a tool for school accountability for student performance. • Provides strategies for internal self-review. • Allows for external review if school performance. • Ensures alignment and coherence for monitoring school improvement. • Provides for school improvement sustainability into the future.	• Effectively monitoring student achievement. • Comparing school performance with that of like schools. • Building a culture of transparency and 'no blame'. • Giving regular feedback about student achievement. • Gaining an understanding of teacher performance. • Helping teachers to manage innovation and change. • Assisting school leaders to anticipate problems before change is introduced. • Enabling staff to reflect upon their own role in accomplishing positive influence on student achievement. • Monitoring is at the heart of sustaining school transformation. • Enabling schools to identify and share best practice.

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