Barriers to effective educational outcomes in disadvantaged high school communities and the impact of a whole-person approach to schooling

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Abstract

Teacher quality is the area most commonly referred to by recent Australian governments to explain why Australia's performance in national and international educational comparisons do not meet expectations. Such an assessment is limited, as are the measures used to determine educational effectiveness. While teachers play a critical part in delivering educational success, many more factors influencing student growth and development are missed or ignored in current analyses.

The aim of this thesis is to identify and aggregate the extensive and complex issues that act as barriers to effective educational outcomes. The focus of this thesis is on disadvantaged school communities, given persistent inequities in educational outcomes. In considering how outcomes might be improved, I focus on the relationship between school purpose and a connected, coordinated whole-person approach to schooling.

Three studies were undertaken as part of the thesis: Study 1, a mixed methods evaluation of a pilot study to determine the impact of incorporating an experienced primary health nurse in a disadvantaged high school; Study 2, a cross-sectional analysis of the physical, social and emotional wellbeing factors associated with academic performance in a sample of students from four disadvantaged high schools; and Study 3, a qualitative study of the perceptions of principals from four disadvantaged high schools in relation to the purpose of schooling and the barriers and facilitators to achieving effective educational outcomes, using semi-structured in-depth interviews.

The pilot study highlighted a significant number of health problems influencing student learning and provided evidence of the feasibility of adding a health nurse to a school learning team. The cross-sectional study provided insights into the complex relationships between social, emotional and physical elements of student development and academic outcomes. In Study 3, principals expressed a need to free-up the curriculum to expand the

focus on a broad range of student outcomes and pointed to policy constraints on their capacity to work within a more equitable school system.

This thesis has highlighted the compounding complex issues that need to be considered when assessing school, state and national educational purposes and objectives. The feasibility of adding integrated community-based support that includes health within an early years to post-school framework in disadvantaged high school communities should be strongly considered. It is recommended that further longitudinal research be undertaken in association with an interconnected community, whole-person approach to schooling, to meet our obligations as a nation regarding school purpose.

Statement of Originality

I hereby certify that the work embodied in the thesis is my own work, conducted under normal supervision. The thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968 and any approved embargo.

Signature:

Date: 17.10.2018

Name: Ted Noon

Acknowledgement of Authorship

I hereby certify that the work embodied in this thesis contains published paper/s/scholarly work of which I am a joint author. I have included as part of the thesis a written declaration endorsed in writing by my supervisor, attesting to my contribution to the joint publication/s/scholarly work.

By signing below, I confirm that Ted Noon contributed as joint author and originator of project to the paper/ publication entitled: (2016) Is there a role for a primary health nurse in a learning support team in a disadvantaged high school? Evaluation of a pilot study. *Australian Journal of Primary Health, 22*(6), 530-538.

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List of Abbreviations

ACARA	Australian Curriculum, Assessment and Reporting Authority
AEDC	Australian Early Development Census
AEDI	Australian Early Development Index
AHPC	Australian Health Policy Collaboration (Victoria University, Melbourne)
AIHW	Australian Institute of Health and Wellbeing (Australian Government)
A-SUEIT	Swinburne University Emotional Intelligence Test (Adolescent Self-Report Version)
ATSI	Aboriginal and Torres Strait Islander
CRF	cardiorespiratory fitness
DoE	Department of Education
ECD	early child development
EI	emotional intelligence
FASD	Foetal Alcohol Syndrome Disorder
FOEI	Family Occupation and Education Index
FSES	Full Service and Extended Schools
HPS	Health Promoting Schools
HSC	Higher School Certificate
ICSEA	Index of Community Socio-Economic Educational Advantage
LBOTE	language background other than English
MD	Melbourne Declaration on Educational Goals for Young Australians
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
NAPLAN	National Assessment Program Literacy and Numeracy
PHA	Primary Health Area
PISA	Programme for International Student Assessment
QSL	Quality of School Life
SES	socio-economic status
WHO	World Health Organization

Chapter 1: Introduction

1.1 Introduction

Featured on the front page of the Murdoch publication, *The Daily Telegraph,* in January 1997 was the headline, 'The year we failed' (see Connell, 2013a; Schetzer, 2001). The article was referring to 26 graduating Year 12 Higher School Certificate (HSC) students from a public high school in Mount Druitt, a suburb on the outer western fringe of Sydney's expanding urban development whose community struggles with intergenerational disadvantage. The newspaper commentary ranked schools based on that year's HSC results and inferred that students from Mount Druitt 'were failures and uncommitted to their studies' (Schetzer, 2001, p. 200).

The political panic that followed the headline resulted in the school, and others in the surrounding area, being reorganised into different configurations (and named the Chifley Campus). However, 'nothing was done to change urban poverty' (Connell, 2013a, p. 106) in the area, and 20 years later in 2017, Mount Druitt High School remains situated in a community of urban poverty (three-quarters of students in the school are in the lowest quartile of disadvantage). According to the National Assessment Program Literacy and Numeracy (NAPLAN) results and My School data, as students enter Year 7 at Mount Druitt High School and progress through to Year 9, they are approximately one and a half years behind the expected reading standard (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2016).

These students and their community were placed in an intolerable situation, one that was not of their making. Three years after the newspaper report, Mount Druitt High School students won a defamation case against the Murdoch press, forcing a financial settlement and apology: '[*The Daily Telegraph*] apologises to [the students and their] parents and friends for all the hurt, harm and suffering it has caused' (Schetzer, 2001, p. 200). The Supreme Court

decision in 2000 represented a ‘landmark’ for children’s rights and, in this case, the protection of their reputation and character (Schetzer 2001, p. 200).

In 1981, 16 years earlier and a few streets away from Mount Druitt High School, the area of Bidwell was thrust into the news with *The Daily Telegraph* headline, ‘Savage night of violence: 1000 kids in wild rampage’ (as cited in Mowbray, 1985, p. 86). An apparent fight between two girls that escalated with the involvement of many other youths became fodder for all Australian newspapers, with much of the commentary focused on the circumstances of families and youth in the Mount Druitt community. The substantive solution by the New South Wales (NSW) Labor government at the time, was Premier Neville Wran’s allocation of funding to build a youth centre to ensure the young people were ‘occupied’ (reported in the *Western Standard*, as cited in Mowbray, 1985). Issues of ‘class, rather than area-based problems, and [issues] related to urbanisation or economic change’ were completely ignored, and the ‘problem’ was quickly settled by the state government through construction of the youth centre and some community projects rather than any ‘attempt [at] fundamental change’ (Mowbray, 1985, p. 90).

For the students of Mount Druitt High School, the media headlines provided a public display of their HSC results—the endpoint of their 13-year scholastic journey—and turned it into a judgement of their personal worth. For the suburb of Mount Druitt, the stigma continued as part of a TV program, *Struggle Street* (O’Rourke, 2017), followed by a second series highlighting the sadness of a similar suburb in Melbourne (Lallo, 2017). Analysis of structural problems such as the disaster of urban planning, is critical to enabling a deeper understanding of how the circumstances for people in such communities are exacerbated (see also Smyth, Wrigley, & McInerney, 2018). Early on, an academic report warned about the care required in setting up such communities, including holding together notions of kinship; developing and maintaining various sociocultural processes while planning and building new

outer suburbs; and a visionary County of Cumberland Plan. Yet, a significant lack of government coordination and implementation let down the development and, ultimately, the community (Watson, 2015). The first of these new outer western Sydney projects occurred in Green Valley in south-west Sydney, quickly followed by Mount Druitt in western Sydney in the early 1960s (Watson, 2015). There was a rapid expansion of housing, along with increasingly high unemployment and a series of complex sociocultural disasters (Watson, 2015). These two areas of outer western Sydney, together with the suburb of Claymore in Campbelltown, which was built in similar circumstances, are some of the most depressed regions in Australia (Torrens University, 2017). This brief account of events in Mount Druitt sets the scene for my thesis on the effective implementation of schooling in areas of disadvantage.

1.2 Background

The pressure on schools to improve Australia's educational standing has increased significantly over the last two decades (Cranston, Ehrich, & Billot, 2003; Cranston, Kimber, Mulford, Reid, & Keating, 2010; Lingard, Martino, & Rezai-Rashti, 2013). This pressure has coincided with the implementation of national assessments through the NAPLAN (ACARA, 2017; Hardy, 2015; Lingard & Sellar, 2013) and international testing comparisons in the form of the Programme for International Student Assessment (PISA) (Gorur & Wu, 2015; Lingard, Sellar, & Savage, 2014; Organisation of Economic Co-operation and Development [OECD], 2017b). Such tests have been widely criticised as narrow and unhelpful forms of measurement on which to make significant judgements about educational outcomes (Berliner, 2009; Larsen, 2010; Lingard, 2010; Reid, 2011b; Tienken, 2012). Specifically, the tests exclude a much broader range of factors that contribute to human development, and sit neatly within a market mechanism that continues to promote competition between schools (Connell, 2013b; Kenway, 2013; Rizvi, 2013; Windle, 2009).

A competitive market-driven approach to schooling has promoted an increasingly privatised and specialised educational system (Bonnor & Caro, 2007; Vinson, 2002). Inevitably, this has contributed to a divide between rich and poor (Connell, 2013b; Reid, 2011a). Non-specialised public schools in poor communities are residualised, and seen as the default position when families are unable to secure access to more privileged school settings (Neill, 2017). Such schools often cater for a concentration of students with high-end disability and behavioural needs (Conway, 2006). Ultimately, this differentiation perpetuates enclaves of school communities that are increasingly left behind when measures of both learning and health are considered (Reid, 2012a; Savage, 2011; Vinson, 2002; Windle & Stratton, 2013).

The number of children living in poverty in Australia has increased by two per cent over the period 2004–2014, to a staggering 731,300 children (Australian Council of Social Services, 2016). These young people are twice as likely as privileged children to not meet school developmental indicators, including physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, and communication skills (31.7% v. 15.2%) (Lamb, Jackson, Walstab, & Huo, 2015; Australian Health Policy Collaboration [AHPC], 2014). This gap continues to increase as students enter high school. For marginalised families and children, these early indicators exacerbate the challenges of supporting improvement throughout adolescence.

In 2015, Australia adopted the United Nations Sustainable Development Goals with a focus on the first target of halving poverty by 2030. Unfortunately, Australia does not have a poverty reduction plan, nor does it have an agreed national definition of poverty (Davidson, Saunders, Bradbury, and Wong, 2018). The Australian Council of Social Services (ACOSS) points out that Australia is the second wealthiest country in the world, yet three million Australians including three-quarters of a million children live below the poverty line

(Davidson et al., 2018). Experts also note that wealth inequality has become an increasing concern and will continue to do so over time. This is exacerbated by an inability for young people – particularly those in disadvantaged communities – to move into the housing market due to the rapid rise in house prices over the last ten years. Invariably, young people will not be able to reap the benefits derived from the capital gain of home ownership over this same time period, as do families in more fortunate circumstances who are able to pass this benefit onto their children. Additionally, young people are entering a world of increasing work instability, one that is heavily casualised and in which there is weakened industrial advocacy to argue for improved conditions (See Committee for Economic Development of Australia (CEDA), 2018; Wiltshire, T., Wood, D. 2017). This combination does not provide young people in Australia with an optimistic outlook and a sense of economic equality (See Australian Council of Social Services – Inequality, 2018).

ACOSS and others acknowledge that poverty and its effects are far greater than a measurement of income. This thesis explores the notion of poverty and its effects on young people and includes not just financial deficit but also a deficit of much broader human capabilities and potentialities (Headey, 2005). Some concerning statistics from a recent ACOSS report on poverty in Australian households with children aged 17 or younger include, a) approximately one in five cannot afford medical treatment or medicine prescribed by the doctor and nearly one in three cannot afford a yearly dental check-up for their child, b) half cannot afford up to date school items and 56% cannot afford to participate in school activities, c) more than half (55%) cannot afford a hobby or outside activities for their child, d) almost three in five respondents cannot afford an internet connection, e) nearly two in five cannot afford fresh fruit or vegetables every day and nearly one in four cannot afford three meals a day for their child (Australian Council of Social Services, 2017).

Abraham Maslow's concept of a need's-based hierarchy helps to provide a powerful perspective on the range of human development requirements in order to live a fulfilling life. According to Maslow, basic needs include biological and physiological, safety, love and belonging, esteem, cognitive, aesthetic, self-actualisation and transcendence needs (beyond the self and helping others). To that end, addressing poverty includes not just addressing adequate and sustainable income and a fair distribution of wealth, but a comprehensive understanding and consideration of a range of dimensions that individually support human development, and together intersect in a way that allow individuals and their families to thrive (See Maslow, A.H., 1943). Countering the effects of poverty and disadvantage is critical to supporting an equitable and just society in Australia and in which a comprehensively supported schooling system plays an important role.

Currently, pressure to improve the nation's educational standing is exerted by both key political parties in Australia, with an emphasis placed on schools, school leadership and teacher quality (Franklin, 2012; Gillard, 2009; Larsen, 2010; Mockler, 2014; Stacey, 2016). The focus on schools alone ignores Fullan and Barber's (2004) notion of 'tri-level development'; that is, shared responsibility for the school, district and state to work together to enhance improvement. The current emphasis on schools and teacher quality also comes with increased levels of accountability and intensified public scrutiny and encouragement of school choice (e.g., the My School website) (Caldwell, 2010; Lingard & Sellar, 2013). With greater scrutiny of school and teacher comes increasingly devolved power for schools and their principals under the banner of greater contextual decision-making (see NSW government policies 'Local Schools, Local Decisions' and 'Great Teaching, Inspired Learning'; Stacey, 2016). Under such a regime, individual schools are responsible for educational outcomes, although unable to control the larger forces that influence outcomes in a tri-level model of educational delivery.

Some scholars argue this process separates out and distances the state's responsibility for education delivery, particularly in terms of accounting for social class and disadvantage (Stacey, 2016). At the state level, governments have greater capacity to set innovative policy, such as utilising a range of agencies to support student learning (e.g., health personnel, including social workers and speech pathologists). Education policy devoid of a significant and active role by the state (outside the allocation of funds and related accountability) subsequently requires a more active individual role by teachers and schools responding to an increasing number of competitive targets and various forms of external validation (see Ball, 2003, 2012; Lingard et al., 2013; NSW Department of Education [NSWDoE], 2017). When there is an intense focus on teachers' role in the classroom, there is a corresponding negligence of the wider sociocultural, political and economic contexts within which teachers work: 'While some teachers may recognise the limits they face in the classroom, most education policy-makers ignore the messy, complicated and complex realities of society, which influence different students' opportunities for academic success' (Larsen, 2010, p. 225).

Calls from political leaders for the improvement of schools amid this level of scrutiny and competitiveness lead to a superficial notion of success and over-emphasis on a narrow part of the curriculum, namely academic outcomes largely in the form of standardised test performance (Klenowski & Wyatt-Smith, 2011; Lingard & Sellar, 2013). This places considerable burden on schools, particularly comprehensive public schools serving poor communities. These problematic structural issues underpin my thesis and interest in revisiting questions of school purpose in a way that captures the 'personal, social, emotional and learning needs of pupils' (Harris, 2008, p. 367).

Revisiting the central purpose of schooling provides a key reference point and means of identifying the gaps between declared intent and actions. This requires moving beyond the

current narrowing of school purpose to consider the broader and original intent of schooling in Australia. Addressing the complex issues impacting schooling, particularly in poorer communities, requires attention to the full range of objectives contained in our national schooling declaration.

I use the Melbourne Declaration on Educational Goals for Young Australians (MD) (Ministerial Council on Education, Employment, Training and Youth Affairs [MCEETYA], 2008) as a basis for reactivating an examination of the purpose of schooling. The MD is the third such national document, developed during a gathering of all state and territory education ministers with the federal education minister every 10 years. One of two goals in the MD states that 'Australian schooling promotes equity and excellence' and this is the 'collective responsibility of governments, families, schools and all sectors of society'. More specifically, the aim is to 'ensure that socioeconomic disadvantage ceases to be a significant determinant of educational outcomes' (MCEETYA, 2008, pp. 6–7). In building a 'democratic, equitable and just society' and a 'high quality of life for all', the MD states that, 'schools play a vital role in promoting the intellectual, physical, social, emotional, moral, spiritual and aesthetic development and wellbeing of young Australians, and in ensuring the nation's ongoing economic prosperity and social cohesion' (MCEETYA, 2008, pp. 4–5).

Arguably, this commitment to the development of the whole person has been sidelined in national educational debate and intellectual development privileged. For example, child health-related matters typically only come to the fore as incidental headlines when data are released, such as when youth mental health was revealed for the first time in 2017 as the primary issue of national concern among young people, and identified as the number one concern for 33.7% (n = 24,055) of respondents. The corresponding figures for recent years were 14.9% in 2015 and 20.6% in 2016 (Bullot, Cave, Fildes, Hall, & Plummer, 2017). The relationship between mental health, wellbeing and school success is significant

(Rossen & Cowan, 2014). Each element of the whole person, including mental wellbeing, is articulated in the MD. However, the importance of each in the development of young people and the advantage of their interconnection, are not treated with any serious intent in current educational practice.

Recognition of the need for a more comprehensive approach to achieving educational outcomes is increasingly evident in countries across the world. For example, in 1997 the United Kingdom's (UK) New Labour acknowledged the need to break the link between social class and achievement, stating that 'no society can afford to waste the talent of its children and citizens', and 'the links between poor health, disadvantage and low educational outcomes are stark' (Gray, 2004, p. 6). In the United States (US), Berliner (2009, p. 19) argued that 'harsh social policies and the pernicious effects of poverty are more responsible for the problems we see in our schools than are teachers and administrators'. He noted the detrimental effects of low birth weight, alcohol use, mental health issues, and dental and vision care due to poor access to health care; poor food security and nutrition; symptoms of post-traumatic stress disorder as a result of living in homes with high family violence and mental health problems; and the effects of dense neighbourhood poverty in which health and learning problems compound over time (Berliner, 2009). Attempting to redress these issues, New York City leaders have embraced a 'holistic vision of school reform', in which schools in high poverty areas are linked to hospitals, health clinics, universities and social service agencies to address health, nutrition and housing needs (Noguera, 2011, p. 7).

Schools' role in the development of the whole person—that is, the intellectual, physical, social, emotional, moral, spiritual and aesthetic development and wellbeing of young Australians—is more likely to gain leverage at a community level (e.g., the Brimbank community model; Leung, 2015) than the broader political level. It is at the local level, particularly in poorer communities, that early attempts are being made to draw together local

research and multiple agencies to bring about positive change (Harris & Ranson, 2005). There is often a struggle for families in poorer communities to draw on services for assistance, including an inability to access effective health care (Dennis, Noon, & Siaw Teng, 2016). As a result, many young people suffer poorly diagnosed and managed health issues, which ultimately affects their educational outcomes (Berliner, 2009; Callander, Schofield, & Shrestha, 2012; Tienken, 2012). Providing integrated and comprehensive education and health services will assist students' whole development, especially if targeted during the early years when such support is most effective, thereby helping to improve learning outcomes throughout their entire schooling (Lamb et al., 2015; AHPC, 2014).

1.3 My thesis

Over the last 35 years, I have been privileged to work in the public education system, particularly in disadvantaged communities on the outskirts of an urban area in a major Australian city. As a principal for nearly half that time, I have been immersed in the lives of communities, families and the teachers who support them. Further, I have operated at a level in the system in which I could participate in policy decisions, including those relating to the professional development of principals. As the years progressed, I gathered a deep insight into the many, complex layers that form the way education is delivered. However, I became increasingly disappointed with the politicisation of education as a national and global product. Of specific concern are:

1. The dominance of neoliberalism in the form of the market is a key discourse underpinning educational reform, setting schools up to compete in an already uneven playing field.
2. The narrow focus on what appears to be a lazy form of educational measurement, relies on limited measures of literacy and numeracy, such as NAPLAN and PISA.

Human development is complex, and much of it is ignored when focused narrowly on these kinds of measures.

3. The view that the market will ultimately allow all sectors of a population to benefit equally over time has been detrimental to achieving equality of outcomes in health, education and other social domains.
4. The prospect of a fairer society as a distant reality, whereby the vision of education and health-related systems working together, from the early years, to ensure that inequality and poverty are curbed and that all schools are supported equally to become great schools, seems an unreachable goal.

Hence, I have undertaken this research to expand my knowledge, and hopefully that of others, to better affect positive change.

My transition from practising educator-principal to the role of researcher – ultimately undertaken as a dual role – provided me with an opportunity to argue a comprehensive case for greater equity and cohesion in supporting schooling in disadvantaged urban communities. Maintaining both roles simultaneously enabled a thorough critique of this complex and diverse field supported by years of experience leading schools in disadvantaged communities. The frame developed through which the three studies were chosen were underpinned by this dual role and a desire to elaborate the link between a current narrow focus on academic outcomes and the need for a much broader holistic means to effective educational outcomes for young people. This was then refined through the selected empirical studies which were chosen to provide a deeper understanding of the practical implications of a whole person approach together with insights into the voices of participants. Ultimately, this frame of the practising educator-principal and researcher provides a sound basis for the enactment of the thesis implications.

My experience working as a principal provided me with insights into the challenges of working and enacting innovation in disadvantaged high schools. For example, it became apparent to me that the employment role of the health nurse needed to be defined as separate from current employment protocols. These employment links are generally with local area health or more commonly with third-party agencies, the latter currently a requirement of the bureaucracy. There were noticeable conflicts: in the case of local area health, time allocated and therefore commitment to the extensive tracking and follow-up of students required in the school community is compromised and limited by having to maintain two roles. Using third-party agencies as a requirement in government schools does not allow for a school to choose the professional of their choice or hold on to any worthwhile applicants. The professional is subject to being employed across a range of work places at the whim of the agency – and therefore lacking the required commitment by the individual to the school. There is also a significant increase in daily cost – equivalent to upwards of a third of the professional's fee. Ultimately, a critical function of the role is the need to have a passionate commitment to the school community. As a principal practitioner and beginning researcher, the operational aspects to the roles has supported and ultimately resulted in significant and well-informed negotiation with state leaders. The duality of my role therefore served to represent both an ideal view, the pragmatic reality of the complexities of implementation, and combined with the research a realistic and well-informed loop to ultimately share with others.

I undertook a review of the literature as the background to considering how to investigate the complex issues posing barriers to effective educational outcomes. I reviewed the history of mind–body dualism, its transformation over time as the basis for a whole-person approach, and the various elements of such an approach (e.g., the intellectual, physical, emotional social development of young people). Next, I conducted three interrelated

studies to determine how educational outcomes can be improved in disadvantaged communities.

The first study included a mixed methods evaluation of a pilot study in a disadvantaged high school in the south-western suburbs of Sydney, involving an experienced primary health nurse as an intervention support for students. With colleagues, I investigated the capacity to access health services in disadvantaged communities; the number and type of health problems found among students screened, and the health services they required; and changes in learning outcomes in response to the intervention (Dennis et al., 2016)

Second, I carried out a cross-sectional study of a cohort of students in four high schools in the south-western suburbs of Sydney. This study utilised a range of quantitative assessments gathered from students in their first year of high school (Year 7) and a second group from Years 7–9. The data enabled an evaluation of students' physical, social and emotional development, and the relationship between these assessments and students' academic achievement, assessed by NAPLAN.

Third, I conducted a qualitative study using semi-structured, in-depth interviews with the principals of each of the four high schools involved in the longitudinal study. The interviews were designed to determine principals' views on the purpose of schooling, and the barriers and facilitators to achieving effective educational outcomes.

1.4 Research aim and objectives

The primary aim of this thesis is to explore the extensive and complex factors that act as barriers to effective educational outcomes in disadvantaged high schools. The secondary objectives of this thesis pertain to the three interrelated empirical studies:

1. Investigate the feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school.

2. Examine the physical, social and emotional wellbeing factors associated with academic performance in a sample of students from disadvantaged high schools.
3. Explore principals' perceptions about the purpose of schooling and the barriers and facilitators to effective educational outcomes in disadvantaged high school communities.

1.5 Research significance

The many barriers to achieving acceptable educational outcomes for all Australians are not clearly identified, aggregated and acknowledged. Schools face responsibility for meeting increasingly high expectations. They are 'expected to resolve society's social and educational inequities in a market-based environment' (Kafka, 2009, p. 328), and are often viewed as 'emergency rooms of the emotions, devoted not only to developing minds but also to repairing hearts' (Barbara Whitehead, as cited in Sparzo, Bruning, Vargas, & Gilman, 1998, p. 5). These demands operate in a turbulent policy environment, which has narrowed in ways that privilege an economic orientation that highlights 'social efficiency' and 'social mobility' (Cranston et al., 2010, p. 183).

This thesis focuses on high school settings in disadvantaged communities, in which the education systems' expectations regarding educational outcomes are the same as those in more privileged settings, despite the existence of many systemic structural issues and barriers. My research seeks to identify and aggregate these significant issues and barriers and, through a series of studies, explore a more substantive whole-person approach for achieving the stated purpose of education; namely, equitable and interconnected educational objectives as represented in the themes expressed through the MD (MCEETYA, 2008).

1.6 Thesis overview

Chapter 2 begins with an overview of barriers to effective educational outcomes related to student circumstances, particularly in poor communities. It considers the early years of child development to the many influences on the journey to adolescence, such as the home environment, neighbourhood, cognition, and mental and physical health. Next, barriers relating to schooling are explored, including school stratification, social segregation, school performance and measurement, and the important role of school leadership in addressing and overcoming barriers to effective educational outcomes.

Chapter 3 establishes the purpose of schooling, including the key focus areas underpinning the MD's 2008 'roadmap' for schools in Australia. An historical perspective on the influence of mind–body dualism is explored, and the way this conceptual thinking transformed over time, including the influence of John Dewey at the turn of the 20th century. In more contemporary times, there is a clear recognition that connections can be developed between education and health that work together for the benefit of students. This connection is further explored through elements of the whole person as a means of supporting young people in a holistic way, in conjunction with their educational outcomes. Global attempts at providing integrated models of education and health are reviewed.

Chapter 4 presents the methodology for the three interrelated studies, namely Study 1, a quasi-experimental pilot study to determine the feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school; Study 2, a cross-sectional analysis of associations between the physical, social and emotional wellbeing of student development and academic performance for a cohort of students from four disadvantaged high schools; and Study 3, a qualitative study of the perceptions of principals in four disadvantaged high schools in relation to the purpose of

schooling and the barriers and facilitators to effective educational outcomes using semi-structured in-depth interviews.

Chapter 5 presents findings from the mixed methods pilot study to determine the impact of the Healthy Learner model, whereby an experienced primary health nurse was embedded in a student support services team in a disadvantaged high school.

Chapter 6 details the results of a cross-sectional study focusing on associations between the physical, social and emotional wellbeing elements and academic performance of a cohort of students from four disadvantaged high schools from Year 7 to Year 10.

Chapter 7 provides an analysis of interviews undertaken with four high school principals to garner their views about the purpose of schooling and the barriers and facilitators to achieving educational outcomes.

Chapter 8 discusses the three studies in relation to the literature and includes comments regarding any limitations of the research, drawing inferences about the value of a whole-person approach when applied in disadvantaged high schools. The thesis concludes with an outline of the preliminary implications for policy and practice, and suggestions for future research.

The following chapter begins with an exploration of the literature; specifically, the complex barriers to child development from the early years through to adolescence, and the influence on effective educational outcomes.

1.7 Statement of contribution

For the three interrelated empirical studies, I provide an outline of my role in their design, implementation, evaluation and reporting.

Ethics approval

For Study 2 and Study 3, I wrote the ethics approval applications guided by my principal supervisor. This process included principal, student and parent information and consent letters. For Study 1, I assisted in writing the NSW Department of Education State Education Research Applications Process (SERAP) ethics application.

Study design and development

I conceptualised, initiated and designed Study 1. The health nurse was employed by me as the principal of the high school and I wrote the initial criteria and role statement (See Appendix 9). Funding was supported by NSW government equity allocation to disadvantaged schools, together with a successful grant application from Clubs NSW (Mounties). I conceptualised and initiated Study 2 and supported by my principal supervisor, designed the components and structure of the whole person elements. I conceptualised and initiated Study 3, and with the support of my principal supervisor, developed the principal interview protocols.

Study measures

In collaboration with a co-author, I sourced the specific assessment tools for students in Study 1. I worked in collaboration with my co-authors to develop the study measures and gain access to the NAPLAN assessments. In addition, I worked in collaboration with my co-author to develop the 'candidacy construct'. I worked in collaboration with my principal supervisor in Study 2 to develop the three, student whole-person element measures, that included initiating and sourcing QSL (social wellbeing) and A-SUEIT (emotional wellbeing).

With the support of my principal supervisor, I designed the interview framework and questions utilised in Study 3.

Recruitment

I was responsible for the identification and recruitment of teachers and community members in Study. I initiated and supervised the recruitment of students from the four schools involved in Study 2. This included contacting the school principals, and the supervising senior teachers. I developed protocols and briefed each of the field teachers undertaking assessments in each of the four schools. In Study 3, I recruited and contacted each of the four principals and developed and provided an overview of the nature of the study to each.

Data collection

For Study 1, I organised the health nurse data protocols for conducting the interviews. In Study 2, I trained a research assistant to collect student level data from the four schools. I also assisted in the transcription and coding of data entry (A-SUIET was initially coded at Swinburne University). For Study 3, I prepared a field research assistant for interview recording and provided protocols to support the appropriate implementation of questions according to the theme and range of participants.

Data analysis

In collaboration with my co-author, I assisted in the analysis of Study 1 data. In regard to Study 2, I assisted in the statistical analyses, which was led by one of my PhD supervisors. For Study 3, I collaborated with my principal supervisor and colleague to develop a coding template and subsequent transcript analysis plan to achieve my study aims.

Presentation of thesis results

During my PhD candidature I disseminated my findings in a range of forums throughout NSW, Australia and internationally. I delivered presentations in the following

venues: University of Sydney, University of NSW (keynote), Western Sydney University, University of Newcastle, Notre Dame University and Wollongong University. In addition, I was invited to present my findings to the Australian Primary Health Care Nurses Conference (Melbourne); Menzies Centre for Health Policy (Sydney University); European Arts Therapy Conference in Krakow Poland; NSW State Secondary Principal Conferences and South-West Sydney Principal forums. Finally, I was invited to present to NSW Department of Education leaders including the Secretary Mark Scott and Deputy Secretaries Murat Dizdar and Georgina Harrisson and their respective department Executive Directors; the NSW Minister of Education (Adrian Piccoli); and the ABC 'AM' program (April 3, 2018).

Chapter 2: Literature Review, Part I

2.1 Overview

Two set of issues arose in my review of the literature on barriers to effective educational outcomes in disadvantaged high schools. First, were barriers related to student circumstances, many of which stem from socio-economic disadvantage and are often experienced as a result of poverty. Such barriers relate to family circumstances and parenting, intergenerational disaffection, health conditions, and community and neighbourhood effects. Second, were a set of barriers pertaining to schooling in Australia and the ways it is shaped by government decision-making and policy orientations. These include the differentiated schooling system, social segregation, performance and measurement, and school leadership.

2.2 Barriers relating to student circumstances

Children are shaped by the circumstances of their environment and the communities in which they live. Poverty has considerable impact on many aspects of children's lives, including their ability to function effectively within the school environment (Brooks-Gunn & Duncan, 1997; Horgan, 2009; Noguera, 2011; Tienken, 2012; Wikeley, Bullock, Muschamp, & Ridge, 2009). The cumulative effects of poverty, which emerge early in life for some children, impact significantly on their subsequent years in high school. Indeed, Horgan (2009, p. 374) suggests that no matter how well schools work to counter issues in an educational environment, family poverty impacts on every aspect of a child's experience of school and requires extensive social policy initiatives: 'Only the eradication of child and family poverty and a drastic reduction in social and economic inequality will allow all children to have an equally good experience of school'.

Children from poor families are more likely to exhibit lower levels of academic success and higher incidences of problem behaviours, and are less healthy than children in

more affluent families (Case & Paxson, 2006; Duncan, Magnuson, Kalil, & Ziol-Guest, 2012). In the following sub-sections, I review literature that highlights key challenges faced by students from disadvantaged backgrounds, starting with the early years and moving to a range of developmental concerns as students progress through their schooling.

2.2.1 Early years

Parents, carers, families and communities are crucial to supporting early childhood outcomes (AHPC, 2014). Improving the circumstances for parents improves circumstances for the child, with benefits that flow through to adolescence. Such benefits include enhanced physical and mental health and wellbeing and, ultimately, better educational outcomes. A comprehensive Australian study was undertaken regarding young people's progress on four educational milestones from the early years to young adulthood (Lamb et al., 2015; AHPC, 2014, 2016), using data from the Australian Early Development Index (AEDI).[1] The AEDI is a revised version of the original Early Development Instrument, designed in Canada and adapted for use in Australia (Brinkman et al., 2007). It is a teacher-completed measure of school readiness that examines physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, and communication skills.

This important Australian study found that in relation to Milestone 1 (4–5 years), children in the lowest socio-economic quintile were 2.1 times more likely to miss the developmental milestone than learners in the highest socio-economic group (31.7% v. 15.2%). For Milestone 2 (Year 7, those in their first year of high school: 'succeeding in the middle years'), learners whose parents did not complete Year 12 (a proxy measure given national data was not available for this measure) were 3.72 times more likely to miss the

[1] Originally designed in Canada, the AEDI is a behavioural checklist with a 100-question behavioural checklist that measures child development between four and six years of age. The AEDI is completed by the child's teacher. It is designed for use with whole populations of children (based on geographical or administrative boundaries) and cannot be interpreted at an individual level for diagnostic purposes (AEDC, 2017).

milestone than learners with at least one parent with a university degree (49.5% v. 13.3%) (Lamb et. al, 2015, p. v).

The Australian Early Development Census (AEDC) National Report for 2016 noted that during the period 2009–2015, the gap between the proportion of developmentally vulnerable children in areas of most disadvantage compared to areas of least disadvantage widened across all five of the assessed domains. For example, in the domain of *cognitive skills*, children in the most disadvantaged areas in 2009 were 2.9 times more likely to be developmentally vulnerable than children in the least disadvantaged areas. By 2015, the gap had increased, with children in the most disadvantaged areas 4.1 times more likely to be developmentally vulnerable than children in the least disadvantaged areas. In the domain of *physical health and wellbeing*, a strong linear relationship was identified, whereby children living in the most socio-economically disadvantaged locations were more than twice as likely to be developmentally vulnerable than those from the least disadvantaged areas (AEDC, 2017). These indicators are concerning, particularly for children in low socio-economic communities in which access to and use of preschools and community clinics is not high, and many young people enter their first year of school with poor indicators for a range of learning outcomes (AEDC, 2017; Lamb et al., 2015). This period of a child's development is critical as the greatest gains are made across all domains, establishing a foundation for the following years of learning (Leseman & Slot, 2014; Magnuson & Duncan, 2016).

In a recent NSW study, a group of researchers sought to detect the early emergence of childhood risk for adult mental health disorders, with a view to finding ways of reducing this risk through early intervention (Green et al., 2017). The study used intergenerational records from government departments of health, education, justice and child protection, and linked them with the AEDI (2009 cohort, $N = 67,353$). They identified the prevalence of developmentally vulnerable children at 5.5%–10.7% across the 16 AEDI indicators. The

results included four classes of 'putative risk states for mental disorders': (1) 6.5% disrespectful and aggressive/hyperactive behaviour, labelled misconduct risk; (2) 4.0% pervasive risk; (3) 11.6% mild generalised risk; and (4) 77.9% no risk. The study found:

> *The odds of membership in putative risk groups (relative to 'no risk' group) were greater among children from backgrounds of child maltreatment, parental history of mental illness, parental history of criminal offending, socioeconomic disadvantage and perinatal adversities, with distinguishable patterns of association for some covariates (Green et al., 2017, p .1).*

While acknowledging that long-term predictions regarding these risks require longitudinal follow-up, the data may be useful for promoting very early prosocial behaviour and emotional regulation interventions to mitigate a variety of adverse outcomes for students as they develop.

2.2.2 Home environment

The child's home environment accounts for a substantial portion of poverty's effects on cognitive outcomes. For example, the availability of reading materials and toys, parental practices such as discipline methods, and language practices in the home are all known to influence cognitive development. Parents living in poor communities are likely to be less healthy—emotionally and physically. Parental irritability and depressive symptoms are associated with more conflictual interactions with adolescents (Brooks-Gunn & Duncan, 1997). Others have noted similar concerns about the effects of parenting, such as Berliner (2009), who highlighted the adverse effects on children in homes where there is conflict, with symptoms resembling those associated with post-traumatic stress. Risk from negative parenting behaviours is highly prevalent in Australian families (Guy et al., 2016). One study found 23–37% of children aged 2–13 were regularly exposed to hostile/angry parenting, and approximately 25% of those aged 4–12 were subject to overprotective parenting. Low

parental warmth increased across the years, so by the ages of 12–13 years, one in three children experienced low parental warmth. Additionally, young people living in poverty have been found to externalise overt behaviours associated with conduct disorder and oppositional defiance, while those who internalise their emotions often manifest psychosomatic problems, including depression and anxiety (Berliner, 2009; Duncan et al., 2012; Shumba, 2010; Slee & Murray-Harvey, 2007).

Experiences in the home have also been linked with a gap or slump in literacy and learning in the early years, which affects progression to later primary school and high school. Hart and Risley (2003) conducted a longitudinal study of children in the US to determine early experiences of vocabulary growth among 4-year-olds. They recorded extensive observations in the homes of 42 families, starting when the children were 9-months old and continuing until they were 3-years-old (1,318 observations). They collected 30 months of sequential monthly hour-long observations: 13 families were classified as upper socio-economic status (SES), 10 families as middle SES, 13 families as lower SES, with a further six families on welfare. Their report noted: 'We observed the 42 children grow more like their parents in stature and activity levels, in vocabulary resources, and in language and interaction styles' (Hart & Risley, 2003, p. 7). The researchers also noted that 86–98% of the words recorded in each child's vocabulary were also recorded in their parent's vocabulary. By 3-years-of-age, trends in the amount of talk, vocabulary growth and style of interaction were well established, suggesting widening gaps across the four groups.

Following six years of data collection and analysis, Hart and Risley (2003, p. 8) reported 'words heard' at the following rates: (1) 616/hr for welfare children; (2) 1251/hr for working-class children; and (3) 2153/hr for those in a professional family 2,153/hour. With such extensive observation data spanning more than two and a half years, the researchers confidently estimated lifetime projections. Undertaking a linear extrapolation of their

findings to a 100-hour week, they estimated the number of words of language experienced by each group: (1) 62,000 for welfare children; (2) 125,000 for working-class children; and, (3) 215,000 in a professional family. The researchers also recorded the children's experiences with parental affirmatives/encouragement (A), and prohibitions (P): (1) 5A/11P for welfare children; (2) 12A/7P for working-class children; and (3) 32A/5P for those in a professional family.

Hart and Risley (2003) noted that by the age of four, an average child in a welfare family might have 13 million fewer words of cumulative experience than an average child in a working-class family, and 30 million fewer than a child in a professional family. The further difficulty noted by Hirsch (2003), Sideridis (2011), Stanovich (1986), Tienken (2012); and Walberg and Tsai (1983), is that by formal school entry, children with word knowledge less than 90–95% of the words in a text (together with domain knowledge or knowledge of worldly experiences that are often limited in poorer communities), will fall further behind. These children still struggle with word coding, while those at a higher level progress through and beyond the words to enhanced interpretation and meaning (Stanovich, 1986). Children in poor communities often do not have the experiences or immersion in conversations more typical of children in families of middle or higher SES.

The word gap became known as the 'Matthew Effect' (Hirsch, 2003; Stanovich, 1986; Walberg & Tsai, 1983), utilised in this context based on its original biblical meaning; that is, 'For unto everyone that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath' (Matt., 25:29; Walberg & Tsai, 1983, p. 359). Walberg and Tsai's study regarding the Matthew Effect hypothesised the cumulative advantages of educative factors, and included motivation, prior and current educative experiences, parental SES, and the psychological aspects of environments experienced in school. The advantages, they observed, are not only colinear but cumulative—those

advantaged on one are likely to be advantaged on the other (Walberg & Tsai, 1983). There has been further empirical support for the Matthew Effect, particularly notable for students who have difficulties with learning (reading in particular), although the support is not universally held (Sideridis, 2011).

Concerns are that the achievement gap becomes more difficult to close as children move in age beyond the early years (Hart & Risley, 2003; Hirsch, 2003; Kellett, 2009; Tienken, 2012). Young people living in disadvantage have been found to suffer deceleration patterns as years in school progressed, particularly with word-meaning, defining abstract and literary meaning, word-recognition and spelling (Chall & Jacobs, 2003). Lack of practice and consolidation of any learning gains for those students who struggle with reading lessens their ability to maintain the word usage they have accumulated, and can be linked to a spiralling loss of interest and motivation (Hart & Risley, 2003; Stanovich, 1986). Very early intervention is critical because although intervention and remediation later in a child's life can be successful, there are already patterns of inefficient and ineffective verbal coding systems in place (Perfetti, as cited in Stanovich, 1986) that impact on their schooling outcomes.

2.2.3 Neighbourhood

Families in poor circumstances are often also constrained in their choice of neighbourhood. Low-income families often reside in poor or extremely poor neighbourhoods, many on the outskirts of major cities where services and choices, for example, schools and other infrastructure such as parks, stores selling healthy foods at affordable prices and accessibility to health services are fewer (Pickett & Pearl, 2001). Such neighbourhoods may be characterised by social disorganisation including crime, many unemployed adults, and neighbours not monitoring the behaviour of adolescents (Brooks-Gunn & Duncan, 1997). Neighbourhood disadvantage manifests its effect via lower neighbourhood cohesion, which is

associated with ‘maternal depression and family dysfunction, which in turn relates to less consistent, less stimulating, and more punitive parenting behaviours, and ultimately, poorer child outcomes’ (Kohen, Dahinten, Leventhal, & McIntosh, 2008, p. 156).

Adverse detrimental effects intersect to cause considerable differences between people living in neighbourhoods characterised by socio-economic disadvantage and those in more advantaged areas. Life expectancy for Australians varies by as much as nearly two decades, depending on SES, including where you live and the circumstances of your living conditions (Torrens University, 2017). Sydney’s three most disadvantaged areas in 2011 (Primary Health Area [PHA]) were Cabramatta and Lansvale; Ashcroft, Busby and Miller (south-west Sydney); and Mount Druitt (western Sydney). Populations in these areas had a high proportion of at least one of four major risk factors (smoking, risky drinking, obesity and low or no exercise). In the PHA of Mount Druitt, 90% of the population met the risk factors, while in the more affluent PHA of Double Bay in Sydney, for example, 53% met the risk factors. The youngest median age at death in Mount Druitt (PHA) was 68 years, while in more affluent areas, Cherrybrook and West Pennant Hills, it was 87 years (Aubussum, 2017; Torrens University, 2017). Areas of most disadvantage have lower levels of private health insurance, high unemployment, high levels of home and income support, and higher levels of infant mortality and disability.[2]

The challenges for students from low-SES backgrounds can intensify when they move neighbourhoods, with some moving schools three or more times during their first four years of high school. Such students have a 65% chance of not completing Year 12 (Smith Family, 2018). This frequent movement perpetuates the risk of not being able to adequately track students to support their health and learning progress, causing discontinuity in targeting

[2] Note that status measure was for the period 2011, while health data was generally for the period 2014–2015 (Aubussum, 2017; Torrens_University, 2017).

comprehensive learning and health indicators, and resulting in cumulative problems for a group of young people who are further residualised (see Sorin & Iloste, 2006). Many associated issues are closely related to mental and physical health and the impact on schooling outcomes, as discussed below.

2.2.4 Cognitive and mental health

In Australia, alcohol is the most commonly used substance in pregnancy (Burns et al., 2016). Foetal Alcohol Syndrome Disorder (FASD) is a serious global problem, due in part to the increased prevalence of alcohol abuse among young women during pregnancy (Sharma, Gawande, Jagtap, Aboulela, & Salman, 2015). Heavy maternal alcohol consumption places the baby at risk of negative outcomes including birth defects, growth impairment, developmental disabilities, and neurodevelopmental dysfunction. A recent study found unprecedented levels of severe neurodevelopmental impairment among incarcerated youth in Western Australia, one-third of whom had FASD with only two previously diagnosed prior to detainment (Bower, Watkins, & Mutch, 2018). While this study was of a specific group of young people, (i.e., incarcerated youth, a high percentage of whom were of Aboriginal heritage), the issue of FASD is critically underdiagnosed in the general population (Bower et al., 2018). This study signals another critical risk for disenfranchised young people living in disadvantaged communities that often goes undetected. Children with FASD have been found to struggle with processing social cues and problem solving, social judgement, developing and maintaining relationships, vulnerability to victimisation, exploitation, peer pressure, and possible interaction with the criminal justice system (Parkinson & McLean, 2013). The neural plasticity of a child's developing brain may provide the opportunity to improve a range of deficit skills in young children with FASD symptoms, if detected early (Parkinson & McLean, 2013).

Mental health has become the number one issue of concern for young people, as noted in a 2017 national survey of youth conducted by Mission Australia (N = 24,055). The proportion of young people concerned about youth mental health has risen from 14.9% in 2015, to 20.6% in 2016, and sits at 33.7% in 2017 (Bullot et al., 2017). The survey also identified a greater proportion of female than male respondents who identified mental health as the major issue facing young Australians: 38.5% - and 27.8% respectively. Children and young people are disproportionately affected by mental disorders; for example, Australian youth aged 16 to 24 years have the highest 12-month prevalence of mental illness at 26% within the Australian population overall (Guy et al., 2016).

The rate of suicide or attempted suicide among young Australians is of considerable concern. In 2016, suicide accounted for over one-third of deaths (35.4%) among people aged 15 to 24, and over a quarter of deaths (28.6%) among those between 25 to 34 years of age. Deaths from intentional self-harm occur among males at a rate three times greater than that for females. In 2016, suicide was the leading cause of death among all people between the ages of 15 and 44, and the leading cause of death of children between 5 and 17 years of age. For every death by suicide, it is estimated that as many as 30 people attempt to end their lives (Australian Bureau of Statistics [ABS], 2017a; Lifeline, 2017).

Exposure to risk factors linked with mental health issues occurs in complex ways; for example, alcohol risk early in pregnancy can cause developmental delay, resulting in disturbed childhood behaviour, which can combine to cause poor school performance and add further to continuing health problems (Guy et al., 2016). Guy et al. (2016) conclude that 'government and service planning for prevention in mental health will not be successful unless a holistic [cross-sectoral and multidisciplinary] approach is applied' (p. 1159).

A 2016 Australian study found that the relative risk of premature death was 2.2 times higher in people with mental disorders than the general population, and three times higher for

those with a psychotic disorder (AHPC, 2016). For people with anxiety disorder, more than 61.8% had concurrent physical health conditions (AHPC, 2016). A research project supported by South Australian Health (Guy, Furber, Leach, & Segal, 2016), using data items from the Longitudinal Study of Australian Children (*N*=6,310 across ages), estimated that 13.9% of 4 to17-year-olds had experienced a diagnosed mental disorder within a 12-month period (Lawrence, Johnson, & Hafekost, 2015; Guy et al., 2016). Multiple risk factors[3] for adult mental illness are already highly prevalent among infants (0-1 year), with 52.5% having two or more risk factors, and among children (aged 8 to 9 years), with 18% having five risk factors or more[4] (Guy et al., 2016).

For 13 to 17-year-olds, 82.4% reported needing some type of help for emotional and behavioural problems in the previous 12 months, while children of families in the lowest income bracket had double the rate of mental health disorders compared to the highest income bracket (24.4% to12.3% for males) (Lawrence et al., 2015). The study also noted other behaviours that could put young people at risk physically and/or mentally, and included the increasing amount of time young people (11 to 17-year-olds) spent on the internet; 25% spent 3 to 4 hours a day, and 17.6% spent 5 to 8 hours a day (Lawrence et al., 2015). These behaviours contribute to concerns about affects on their ability to eat, sleep, physical activity and time spent with significant others in their lives.

Schools have a crucial role in creating conducive environments for young people and are also sites for early detection and referral (Rowling & Weist, 2004). The cumulative effects of early poverty exposure and externalising symptoms is linked to a confluence of psychosocial (violence, family turmoil, child separation from family) and physical (noise,

[3] Risk factors include parent anger, bullying, low parental warmth, parental alcohol use, poor language and literacy skills, conduct problems and hyperactivity (Guy et al., 2016). This study builds on work by Fryers & Brugha (2013).
[4] Threshold value = 2. Note: having two and more risk factors was considered 'at-risk'. See Guy et al. (2016) for further details.

crowding, substandard housing) risk factors during adolescence (Evans & Cassells, 2014). Given the significance of data regarding early onset of child mental health indicators, it is critical that early preventive strategies are implemented and include a cross-sectoral and multidisciplinary approach supported by the government (Guy et al., 2016). Headspace[5] in Australia caters for 12 to 25-year-olds, and early signs indicates that the organisation is having a moderate impact (Rickwood, as cited in Guy et al., 2016). As the crucial early development period of brain circuitry that is associated with a child's future social, emotional, and cognitive capacities is largely established in the antenatal period to five years of age (Amos, Segal, & Cantor, 2015; Guy et al., 2016), it is therefore critical that the current limited mental health services for young people under 12 years of age is also addressed (Guy et al., 2016).

2.2.5 Physical health

The prevalence of physical inactivity and overweight/obesity has been increasing dramatically in recent decades and is described by some as a global pandemic (Chang, Chu, Chen, Hung, & Etnier, 2017; Kantomaa et al., 2013). A report by the Lancet Physical Activity Series Working Group, noted that 80.3% of adolescents (aged 13 -15 years) worldwide do not meet public health guidelines for minimal physical activity (Hallal, Anderson, & Bull, 2012). The World Health Organization (WHO) report on obesity and overweight noted that, globally, obesity has more than doubled since 1980 (WHO, 2016). In 2014, more than 1.9 billion adults (18 years and older) were overweight, of which 600 million were obese. For children (under the age of 5) 41 million were overweight. In addition, most of the world's population lives in countries where being overweight or obese kills more

[5] Headspace: is the National (Australian) Youth Mental Health Foundation providing early intervention mental health services to 12-25-year-olds, along with assistance in promoting young peoples' wellbeing. This covers four core areas: mental health, physical health, work and study support and alcohol and other drug services (Headspace, 2018).

people than does being underweight (WHO, 2016). Hassevoort et al (2016) have also noted that obesity is increasingly being recognised as a risk factor for cognitive impairment (in addition to associations with cardio-vascular disease, cancers and metabolic disorders). Indications from animal studies have highlighted the effects of being obese on the hippocampus (which plays a role in supporting memory function) and specifically, poorer performance on spatial (relational) memory (Hassevoort, Khan, Hillman, & Cohen, 2016). The authors also noted the importance of dietary quality; that children and adolescents who adhere to dietary guidelines or patterns have been shown to exhibit superior academic achievement relative to those who regularly consume poorer quality diets (Hassevoort et al., 2016).

Statistics vary significantly for young people from different socio-economic groups within Australia. For example, in 2014–15, one-third (33%) of boys in the lowest SES group were overweight or obese compared with only 22% of those in the highest SES group. Similarly, more than a third (38%) of girls in the lowest SES group were overweight or obese compared with 24% of those in the highest SES group (Australian Institute of Health and Welfare [AIHW], 2017). Hugo and Franzon (2006) describe the serious social consequences of inaction on overweight and obesity in Australia, particularly for young children given that early action is more likely to be successful (Hugo & Franzon, 2006). They declared that:

> *This may be one of the most insidious and far-reaching dimensions of social polarisation in Australian society that babies, infants and children in disadvantaged situations are set on a path of suboptimal health, low productivity, reduced ability to fulfil their potential and low self-esteem purely because they are born into a situation where there are poverty-based barriers to adopting healthy behaviours. (p. 313)*

According to the National Physical Activity Guidelines for moderate to vigorous physical activity, 44% of 12 to 24-year-olds met the standard (38% in low-SES areas)

(AIHW, 2011). Australian health and wellbeing data indicates that, 'the greatest relative disparity in attributable disease burden by socio-economic group was seen in the 20 to 34-year age group, where the rate of burden due to physical inactivity in the lowest socioeconomic group was twice that of the highest socioeconomic group' (AIHW, 2017, p. 23).

Longitudinal studies have noted that the steepest decline in physical activity over the lifespan occurs during the early years of secondary school (Dwyer et al., 2009; Nader et al., 2008; Scully, Dixon, White, & Beckmann, 2007; Strong et al., 2005). For children in disadvantaged contexts, researchers have also noted a particularly low rate of participation in sport when compared to the broader community (Olds, Dollman, & Maher, 2009), signalling the need for targeted interventions in these communities (Hardy, Okely, Dobbins, & Booth, 2008). This may include 'non-organised physical activity' that is community-based, and providing school facilities before and after school, as well as weekends and holiday periods (Hardy et al., 2008, p. 840).

A systematic review of evidence about the link between cardiorespiratory fitness (CRF), physical activity and academic achievement has reported a strong association between higher levels of CRF, health and academic achievement (Marques, Santos, Hillman, & Sardinha, 2017). CRF enhances brain structure and function which in turn assist concentration and memory.

2.3 Barriers relating to schooling

In this next section of the literature review, I focus on how schooling in Australia is structured and how aspects of that structuring pose additional challenges for low-SES schools. This literature highlights how the historical stratification of schools, social segregation, school performance and measurement as they relate to policy agendas, and the

pressure on school leaders combine to work against effective outcomes for students from disadvantaged backgrounds.

2.3.1 School stratification

The shape of formal schooling in contemporary Australia began predominantly with religiously based schools. Eventually basic/elementary state public schools were added in the 1870s and established for working-class children who could not afford private schools, essentially in order 'to gentle the masses' (Reid, 2011a, p. 49). By the latter part of the 20th century, a neoliberal market orientation had taken hold, which brought with it an increasingly stratified education system structured in a way that places individuals within a hierarchical performance regime (Savage, 2011).

The proportion of private to public high schools in Australia is among one of the 10 highest of 53 OECD countries, and in the period 2010 to 2016, and while there are reports of increases in public school enrolments over recent years, this has occurred to some extent in primary schools when in fact public secondary school enrolment decreased from 60% to 59.13% (Rowe, 2017). There has also been a large growth in the government's public school system of selective and specialist public high schools over the last three decades, particularly in NSW (Considine, 2012), despite strong recommendations from the Wyndham Review of 1958 to avoid this trend (Considine, 2012). The Review recommended that all students move from primary schools without examination into their local comprehensive public high schools. However, following significant public support and considerable influence from former pupils (including many members of the review committee), exceptions were retained for traditional 'academic schools'; namely, Sydney Boys High and Fort Street (see Considine, 2012; Duffield, 1990; Hughes, 2002).

The policy approach of NSW governments—particularly in the period from 1989 through to 2010—to instil and expand differentiation among public secondary schools,

'substantially fragmented the traditional comprehensive school system'; that is, non-selective/specialist high schools (Considine, 2012, p. 89). In 1988, 97% of all public secondary schools were traditional comprehensive schools. By 2010, the proportion had fallen to 71% (Considine, 2012).

Table 2.1: Growth in different types of NSW public secondary schools, 1987–2010 (3 government periods).

Type of public secondary school	**1976–1987**		**1988–1994**		**1995–2010**	
	Number	**%**	**Number**	**%**	**Number**	**%**
Selective	11	3	24	6	44	11
Specialist	0	-	55	14	33	8
Campus (snr/jnr)	0	-	4	1	39	10
Total: Non-comprehensive	11	3	83	22	116	29
Total: Traditional comprehensive	368	97	367	78	282	71
Total: Public schools	379	100	450	100	398	100

Adapted from Considine (2012).

The current NSW Minister for Education, Rob Stokes, recently expressed concern about the stratified state of public schooling: '[W]e need to have public schools that are inclusive of everyone rather than deliberately separate children on the basis that some are gifted and talented and others are not' (Singhal, 2018). In response, it was noted that 'we are left with…an ongoing trail of collateral damage to other schools and overall student achievement' (Bonnor & Ho, 2018).

The Vinson 'Inquiry into the Provision of Public Education in NSW' (Vinson, 2002), also expressed serious concerns regarding selective and specialist schooling:

> *It is difficult to deny the weight of evidence provided to the Inquiry in submissions, hearings and visits to some affected schools, that at least some comprehensive high schools are suffering significantly from the increase in selective (and other specialist) schools. As a western Sydney high school complained:*

'With the withdrawal of many of the more academically talented students to other schools, there is a drop in the quality of leadership amongst senior students and so a drop in the tone of the school. This becomes part of a continuing cycle where parents, although wanting to send their students to the local comprehensive school, feel that their children will be disadvantaged, especially if they are talented, and so they send them to specialist government and private schools. The solution often given by the authorities is that we have to 'get out into the market place and compete'. This is a difficult thing to do when the tools with which we are to compete, our talented students, are being taken from us.'

The Inquiry noted also that staff and parents become anxious about the future of the local school. The result may lead to a downward spiral that may be difficult to turn around. This may have an impact on the system as a whole, and one observer noted:

'... the emergence of a market in secondary education through the creation of specialist and selective high schools may have served to accelerate the drift to private schools through the apparent endorsement by the Government of the existence of a hierarchy of schools.' (Vinson, 2002, p. 22)

The differentiated approach to schooling in Australia—and NSW in particular—exemplifies the current predominance of a focus on social efficiency and social mobility, highlighting the economic and private purposes of education, while drifting further away from a focus on democratic equality, or the public purposes of schooling (Cranston, Kimber, Mulford, Reid, & Keating, 2010; Lingard, 2010; Reid, 2011a). While the MD's 'equity' focus includes the commitment to 'ensure that schooling contributes to a socially cohesive society that respects and appreciates cultural, social and religious diversity' (MCEETYA,

2008, pp. 6–7), Australia was ranked the fourth highest of OECD countries in terms of high social segregation (OECD, 2017a). The stratified nature of schooling in Australia contradicts the equitable and socially cohesive society policy goal. This raises the question: 'Is [the structure of] schooling part of the problem or part of the solution?' (Connell et al., 2013, p. 83).

2.3.2 Social segregation

Schools 'do not just reproduce culture, they shape the new society that is coming into existence around us'; and yet, schools are a 'site of struggle', including over how to improve educational outcomes (Connell, 2012, p. 681). Recent governments in Australia have sought to ensure educational standards are maintained, even lifted, as was amplified during the Rudd–Gillard period of government in which the solution to 'fix[ing] inequality' was framed as 'if only we make the market work better' (Smyth, 2010, p. 116). The consequence for poor families was that they were never *in* the market as they were 'lacking the requisite cultural capital' (Lingard, 2010, p. 140). This stands in stark contrast with the ever-increasing status of elite schools which only 'provide an avenue of social mobility for 'deserving' members of subaltern populations' (Kenway & Fahey, 2014, p. 178). There is a desire of already advantaged parents to protect and enhance 'their own and their children's social position by choosing schools that are not generally accessible to less advantaged students' (Angus, 2015, p. 401). This 'cocooning' of their children 'within a social and cultural milieu' supports middle-class values and aspirations and reinforces a 'demonizing of "the other"—of working class and minority children' (Angus, 2015, p. 401). There is a 'distinct and growing segregation between schools', whereby the middle-classes 'express the need to connect with a similar school community or augment their positional advantage' (Rowe & Windle, 2012, p. 148).

Many working-class families have a strong link to their communities in preference to 'more cosmopolitan life-worlds' (Smyth et al., as cited in Angus, 2015, p. 406). Several researchers have addressed the significance and effect of this stratification and its associated dynamics on school and teacher culture (Angus, 2015; Wrigley, Lingard, & Thomson, 2012; Zipin, Sellar, & Hattam, 2012). With enhanced school choice, schools respond by 'representing themselves as worthy of being chosen' (Angus, 2015, p. 402). Privileged parents seek the 'relationship networks' available in elite school settings (Angus, 2015, p. 405). The desperation by some parents to access elite schools even means their children travel daily distances of 100 km to get to their school of choice; for example, in the case of selective public schools in NSW (Smith & Gladstone, 2018).

The MD (2008) commitment to 'social cohesion' is significantly challenged by the enactment of the extensive economic agenda to which the government is committed. However, the perpetuation of inequality threatens social cohesion through social division (Angus, 2015; Lingard, 2010). Social cohesion is jeopardised by the 'over-emphasis on the importance of attainment, [whereby] we are in danger of prolonging and exacerbating injustices in society' (Gorard, 2010, p. 62).

Differentiated school systems run contrary to the view of some scholars that the integration of students from across all talents and parts of society supports the range of educational outcomes, whereby 'diversity infuses children's daily experience' (Alexander, 2016, p. 28). The division of schools leaves low-SES public schools vulnerable in part because they work within a more challenging disciplinary environment (Perry, Lubienski, & Ladwig, 2016). Perry et al. (2016, p. 178) note that 'classrooms that have fewer distractions promote more opportunities for teaching and learning', although they also suggest that any superior academic advantage claimed by private schools is explained by the characteristics of the students they enrol, not the teaching practices or the schools themselves.

2.3.3 School performance and measurement

Increasingly, schooling in Australia is associated with greater accountability and the further promotion of school choice (Mockler, 2014; Rizvi, 2013), often invoking the MD's concerns for 'promoting world-class curriculum and assessment' and 'strengthened accountability and transparency' (MCEETYA, 2008, pp. 10–11, 16–17). A key strategy to enact these commitments is through the publication of test results (NAPLAN and My School) which reflects how 'outcomes are privileged over purposes and processes' (Thomson, 2013, p. 170). Prominent scholars argue that the use and public display of national literacy and numeracy assessments (NAPLAN) for Years 3, 5, 7 and 9 through the My School website, is a matter of convenience, because it is 'easy to measure' (Lingard, 2010, p. 135). Unfortunately, they argue, this ignores a host of other significant indicators that relate to the broader range of educational commitments for young people (Reid, 2012a).

The reliance on national literacy and numeracy test results for the assessment of schools' progress is considered an inappropriate use of the data (Wu, 2010). And yet, the current use of NAPLAN data for reporting school performance further embeds education within a market whereby families exercise their choice of schooling as consumers (Buchanan & Chapman, 2011; Loughland & Sriprakash, 2014). This approach is supported by policy. For example, in 2010, Education Minister Julia Gillard, described the approach of narrowing down to measures of literacy and numeracy as 'what is required' for school improvement and in support of school choice (Lingard, 2010, p. 131). Gillard argued that these published assessments provided identifying information with the aim of helping schools lift performance and, when schools fail, serious action could then be taken such as 'replacing the school principal, replacing senior staff, reorganising the school or even merging it with other more effective schools' (Reid, 2009, p. 6). Prime Minister Rudd, in 2008, told the National Press Club: 'if some (parents) walk with their feet that's exactly what the system is designed

to do' (as cited in Reid, 2009, p. 7). Reid (2009) noted that 'extending the education market and improving equity are incompatible policies' (p. 7), as it provided people with an 'illusory choice' and left public schools with the largest number of students requiring special attention and therefore in the position of having to do the 'heavy lifting on behalf of all schools' (Reid, 2009, p. 7).

The drive to perform is amplified by the way in which governments, through the media, instil a sense of crisis or panic in the minds of the public by overtly linking education directly to the economy (Mockler, 2012). Mockler noted that 'education is fertile ground for panic' from a political perspective, as all members of a population have either been to school or have connections to young people currently in schools and, as such, education has the capacity to 'speak to the hearts and minds of the electorate' (p.4). Prime Minister Gillard, in 2012, expressed her dismay at Australia's relative decline in education as determined by PISA rankings when compared to emerging educational leaders such as Korea, Singapore, Japan, and the Chinese city of Shanghai. Gillard claimed that Australia was at risk of losing the 'education race' and becoming the 'runt in the litter' without sustained reform (Franklin, 2012). Referencing the nation's educational position to an international 'race' is an example of what Sellar and Lingard (2013) refer to as 'externalisation to push internal reform agendas in respect of schooling' (Sellar & Lingard, 2013, p. 479).

There is growing interest by researchers to understand more about the PISA standings from the perspective of the countries that have emerged in recent years and now sit near the top of the ladder. Particularly, this includes an understanding of the performance of East Asian students (Gorur & Wu, 2015; Ho, 2017a; Jerrim, 2015) and the role of schooling effects, cultural effects and measurement effects. An analysis was undertaken of mathematics performance using PISA data from second-generation Australian-born immigrants, noting the limitations of making causal inferences given the cross-sectional nature of the PISA dataset

(Jerrim, 2015). The analysis showed that these young people outperformed their native Australian peers by approximately 100 test points, a magnitude that has increased considerably over the last 10 years. These students performed similarly to students in their corresponding East Asian jurisdictions—namely Hong Kong, Japan, Singapore, China, Republic of Korea (South Korea) and Taiwan—which challenges the notion that the schooling system is responsible for such results. Rather, Jerrim (2015, p. 330) noted that catching 'the top-performing East Asian nations … may only be achieved with wide-spread cultural change, where a hard work ethic and a strong belief in the value of education is displayed by all families and instilled in every child'.

There is evidence of attempts to recognise and measure differences among schools, particularly when considering the impact of disadvantage. However, there is a case for a more comprehensive coverage of the complexity involved. Drawing on Nussbaum's (2003) and Sen's (1976, 1987) work on human capabilities, Callander et al. (2012) argue that a multidimensional measure of poverty is needed, one that includes economic resources (low income), health *and* education—to capture the compounding effects of multiple forms of disadvantage. The researchers argue that such a measure requires a cross-portfolio policy response from governments (Callander et al., 2012). Others, including Kanji and Chopra (2007), have similarly sought to define poverty in a way that recognises 'a basic needs of life approach'. Also using Sen's (1976, 1987) work on poverty measurement, they developed what they call the 'human contestability' model (identifying what is required to enable a person to *compete* in the market). Dimensions of the model include social systems (measured by a person's responsibility and accountability), physical ability (exercise, nutrition), intellectual capability (access to schooling, higher education), human potentiality (work preparedness) and social-economic activity (accessibility to networks, financial resources, social standing, and location advantage).

In NSW, the Department of Education's latest attempt to develop a multidimensional measure was a 'school-level index of educational disadvantage related to socio-economic background' (Rickard & Lu, 2014, p. 8). The resultant 2013 Family Occupation and Education Index (FOEI) forms the basis of an equity loading for socio-economic background to support funding for public schools across NSW. It was developed using students' parental education and occupation information provided on enrolment forms. A strength of the measure is that it utilises individualised family data, rather than measures that are area based and do not account for individual differences. However, the measure relies on parents completing the information on enrolment forms and answering questions related to their level of school education, highest post-school qualification and the occupation group to which they belong.

The FOEI measure is regarded as more refined than its predecessor, the Index of Community Socio-Economic Advantage (ICSEA) (ACARA, 2015), which is used as the measure of socio-economic advantage for the My School website (ACARA, 2016). However, neither measure considers the range of complex issues that manifest for some students/families identified in localities of substantial intergenerational poverty. For example, some schools face a high incidence of student non-compliance and related misbehaviour/hostile behaviour, in contrast with schools that may be equally disadvantaged but characterised by higher levels of student compliance, (e.g., high attendance, high aspiration and compliant nature, often found in schools with a high proportion of students from south-east Asian backgrounds) (see Dandy & Nettelback, 2002; Ho, 2017a).

A more comprehensive measure could help to distinguish between such schools and could, therefore, support the work required to address the complex issues that act as barriers for families in these particularly difficult circumstances (see Perry, Lubienski, & Ladwig, 2016). Such a measure requires an alignment with the broad purposes of schooling and a

commitment to the whole person, much of which is currently not measured or unable to be effectively measured. The inadequacy of current educational measurement is heavily weighted to the 'hegemonic practices of the age of measurement' (Webster, 2017 p.344). Ultimately, this should direct policy-makers to a focus on what makes education good according to the values we hold, rather 'than what makes it merely effective or efficient' (Biesta, 2017, p. 316).

2.3.4 School leadership

In the current political context, the pressures for student and school performance typically fall on school leaders. For principals, the role of leading a school within a challenging community context has become increasingly complex and stressful (Riley, 2017). Over the last decade, the high expectations linked to national literacy and numeracy targets has heightened the expectation to compete with 'like schools' (ACARA, 2016) and surrounding schools, even though many of these schools may be a mix of poor comprehensive state schools and elite, specialised and private schools (Cranston et al., 2004; Riley, 2017; Stacey, 2016). Principals' capacity to dedicate time to instructional leadership has been dramatically reduced (Cranston, Tromans, & Reugebrink, 2004; Terosky, 2014); at the same time, the NSW government has expanded the role of principals in government schools under its Local Schools, Local Decisions policy (Stacey, 2016). This reform allocates further responsibility to principals for improved results at the local level, while requiring them to take on management of all finances previously undertaken by the bureaucracy, such as control and management of all staff salaries (NSWDoE, 2017).

In the current education environment, shaped by the reforms that began in the 1980s under the Metherell/Greiner government of 1989, the principal's role has continued to be redefined. The environment of school-based management and market-based competition means principals now are key players in 'driving the educational reform agenda' (Considine,

2012, p. 142; NSWDoEC, 2015). The principal's role is now akin to that of a 'chief executive officer', accountable to a 'board' (Considine, 2012, p. 142). Principals are expected—according to the Australian Standards for Principals (AITSL, 2015)—'to raise student achievement at all levels, create and sustain the conditions for quality teaching to thrive; influence, develop and deliver on community and government policy; and, contribute to a twenty-first century education system at local, national and international level' (AITSL, 2015, p. 4).

Sparzo et al. (1998) noted that the leadership of schools within a more complex and market-oriented environment requires 'exceptionally wise leadership' (p. 6). They caution that leaders will likely 'make halting educational commitments, experience confusing discontinuity, and endure poorly integrated services and programs' (Sparzo, Bruning, Vargas & Gilman, 1998, p.6). Devolved decision-making for schools is reliant on fluctuating funding streams, at times tied to specific purposes as part of particular government agendas (Loughland & Sriprakash, 2014; Savage, 2011; Windle & Stratton, 2013). For example, state funding for public schools is dependent on federal funding supply, which is based on each state and territory providing performance data according to set targets and goals demanded by the Commonwealth (Connell et al., 2013). In 2012, Education Minster Julia Gillard declared: 'I'm not going to be giving money to states and territories unless they sign up to making sure that their schools are improving', based on literacy and numeracy data (as cited in Mockler, 2014, p. 13).

The pressure experienced by principals is unsurprising given policy documents recognising principals as having the 'second biggest in-school impact on student outcomes after classroom teachers' and that 'effective principals are especially important for schools that are struggling in difficult circumstances' (NSWDoEC, 2015, p. 1). At the same time, national statements declare that the 'principal of a school in the twenty-first century is one of

the most exciting and significant roles undertaken by any person in our society' (Australian Institute for Teaching and School Leadership [AITSL], 2015, p. 6). The Australian Professional Standard for Principals (AITSL, 2015) also notes that principals 'work in a complex, challenging and changing environment' and that the power they exercise can make a difference to individuals and society (p. 6). Within the context of these high expectations, and the broader competitive environment facing schools, all principals are under pressure to perform. Those leading disadvantaged public high schools face the added difficulty of implementing a standard curriculum and performing against targets set for the full range of schools, including those in elite and specialised settings (Smyth, 2010).

Data regarding principal wellbeing in Australia provides a glimpse of the challenging educational environments in which many work (Riley, 2017). Since 2011, approximately 50% of Australia's 10,000 principals have taken part in the Australian Wellbeing Survey. The results represent a significant national challenge, particularly when considering that 'school leaders' employment conditions are students' learning conditions' (Riley, 2014, p. 5). While the survey has found that principals have a stronger commitment, a greater sense of purpose, and higher levels of job satisfaction when compared to the general population, the following data provide an insight into some of the concerning issues for principals regarding their health and wellbeing:

> *Principals experience high levels of job demands (1.5 times the general population) emotional demands (1.7 times) and emotional labour (1.7 times) being the highest demands when compared to the general population. This is correlated with higher levels of burnout (1.6 times higher), stress symptoms (1.7 times higher), difficulty sleeping (2.2 times higher), cognitive stress (1.5 times higher), somatic symptoms (1.3 times higher), and, depressive symptoms (1.3 times higher) (Riley, 2017, p. 11)*

Examining all potential sources of stress, Riley (2014, 2017) also found that, compared with the general population, principals are five times more likely to experience threats of violence and seven times more likely to experience physical violence (Riley, 2014, 2017).[6]

These data provide a grim picture of the wellbeing of the key leaders in schools and is unhelpful for inspiring potential leaders to take up the role. It is estimated that 70% of Australia's 10,000 school principals will have reached retirement age in the next few years and they will need to be replaced by much younger individuals (NSWDoEC, 2015). Given the high recruitment numbers required in a short timeframe, many new recruits to the principalship will potentially lack substantive experience of the kind needed to thrive and effectively lead schools in the most challenging environments. The potential risk is an even higher level of adverse personal health outcomes (Riley, 2014, 2017) and negative effects on student outcomes, particularly for those in need of the greatest support.

2.4 Summary

This review of the literature highlights the complex set of factors that affect the attainment of successful educational outcomes for students in disadvantaged high schools.

> *"Walking into a classroom, a teacher doesn't just meet a group of minds. The teacher meets a group of embodied, emotional and sociable – as well as thinking – young*

[6] Sources of stress (rated out of 10) as reported in the 2016 Australian Principal Wellbeing Survey. The two greatest sources of stress that have remained consistently high (~8/10) over the length of the survey have been (i) sheer quantity of work and (ii) lack of time to focus on teaching and learning. The worrying trend over time has been the increase in stress caused by (i) mental health issues of students (5.5–6.5/10) and (ii) mental health issues of staff (5.2–6/10). Principals and deputy/assistant principals experience far higher prevalence of offensive behaviour at work each year than the general population. The prevalence rate for threats of violence is extremely high. In 2011, 38% of participants had been threatened. This rose to 44% by 2016, with close to 1 in 2 principals receiving a threat. Actual physical violence prevalence rose from ~27% in 2011 to ~34% in 2016; 1 in 3 principals (8.6 times the rate of the general population, up from 7 times in 2011).

humans. They are undoubtedly going to learn and develop, whether the school helps them or not" (Connell, R., in 'Education, Change and Society', 2013, p.17).

Connell's depiction of the forces that shape childhood and adolescence and the role of schools in assisting young people reminds us of the enormous responsibility placed on teachers and schools. Recognising the influence and proportion of the outside-of-school time and circumstances of young people as significant when compared to in-school factors is critical and require equal and timely input from various societal agents. These agents represent political, geographical, economic, cultural and social factors and provide powerful support for school communities.

Those who are privileged by the circumstances of their birth more often have access to paths that lead to notions of success. Conversely, multiple circumstances of misfortune – stemming often from successive intergenerational poverty factors in addition to neglected and/or a disrupted environments (place and space) – mean that individual circumstances of the poor require far greater comprehensive planning and support. Commonly, those who provide the structures for the disenfranchised often do so from privileged positions, through the narrow lens of continuing to add financial support and incentives to those already in powerful positions with the hope that benefits will trickle down to the rest. Equally, it is not uncommon for politicians to assume that those lower on the social strata would greatly benefit from a stronger sense of aspiration (See Financial Review, 2018). By way of contrast, Connell provides a story of a poor community on the outskirts of a city in Brazil. The principal of a school he visited took him to the most important room in the building – the school kitchen where much effort was placed on providing children with their only solid meal of the day (Connell, et al., 2013).

Acknowledging and supporting the range of circumstances in the development of young people is a responsibility to be equally shared by all agencies in a society. Long-term national goals and subsequent actions are required while short-term interventions at a community level should be provided to encourage hope and a means to envisioning a bright future equally for all. Subsequent studies in this thesis attempt to provide further elaboration of ways in which both short and long-term support can be provided across the range of human development elements.

For many who face challenging personal circumstances within their home or community environment, the current structure of schooling in Australia sets them up for failure, especially when performance measures focus so narrowly on academic outcomes. Echoes of the MD's commitment to the whole person are faint in this account of barriers. In the next chapter, I return to the broad commitments espoused by Australian government Ministers for Education and explore historical and contemporary perspectives on the purposes of schooling.

Chapter 3: Literature Review, Part II

3.1 Overview

A review of the literature in Chapter 2 revealed a complex set of barriers to effective educational outcomes in disadvantaged high schools. I now return to considering the purpose of schooling in Australia and identify key directions and commitments as they appear in our national education documents, particularly the MD (MCEETYA, 2008). This chapter begins with a brief exploration of the background thinking that underpins these expressed purposes of schooling, from both historical and contemporary perspectives. The concept of mind–body dualism and its influence through to the early 20th century is considered. The work of philosopher and educator, John Dewey, who attempted to promote an interconnected and universal approach to educational thinking, is highlighted. Finally, more recent attempts to construct unified and integrated approaches to supporting equitable outcomes for students are identified, including those linking education to other agencies such as health and framing schooling in the form of integrated holistic community models.

3.2 Purpose of schooling

Establishing purpose to human endeavour provides a basis from which to attach meaning and enable a sense of direction. Clarity of purpose can produce a 'stable and generalised intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self' (Damon, Menon & Cotton Bronk, 2003, p. 21). Accomplishment of purpose is usually associated with some measure of progress. At a societal level, the individual seeks to be part of a broader sense of order in which there is coherence and support from various sectors within society (see *The transectional structure of society*, 2014). In formalising the purpose and agenda for Australia's educational future, national declarations have been established by successive governments over the last 30 years.

These declarations provide the clearest articulation of educational purpose and commitments for the development of young people within Australian society.

For the past three decades, Australian state and territory education ministers have met together with the national education minister to set the agenda for Australia's educational future. On each occasion, the ministers were required to consult within their states and territories to then inform a set of national goals that included targets or commitments. Each revised edition of the declarations was said to provide a 'sharper focus on students and their learning outcomes' supported by the anticipation of changing social, economic and educational circumstances (MCEETYA, 1998, p. 2). The declarations are described as 'key roadmaps for education, produced and endorsed by the relevant political leaders across Australia' (Ailwood et al., 2011, p. 646).

First to be released was the four-page Hobart Declaration (Education Council, 1989), which contained 10 goals for schooling. At the time of its introduction, the majority of state, territory and national governments were led by the Australian Labor Party. This period marked the beginning of an 'increasingly interventionist Federal Government intent on tying funding to its own priorities' (Ailwood et al., 2011, p. 646). Ten years later, the Adelaide Declaration (MCEETYA, 1999) was released in the form of a brief outline containing just four pages. However, this second declaration provided a 'more developed vision for social justice in Australian education' with an expansion on where improvements to 'equitable access to education are to be made' (Buchanan & Chapman, 2011, p. 4). The Adelaide Declaration also introduced 'a vision for holism in education' (Lovat, Dally, Clement, & Toomey, 2011, p. 60), namely that 'schooling provides a foundation for young Australians' intellectual, physical, social, moral, spiritual and aesthetic development' (MCEETYA, 1999 p.1).

The 16-page MD was released with a four-year action plan companion document in 2008 and was 'considerably more expansive' than the previous two iterations (Buchanan & Chapman, 2011, p. 4). The MD contains two national goals for education: first, that 'Australian schooling promotes equity and excellence' and, second, that 'all young Australians become: successful learners, confident and creative individuals, and active and informed citizens' (2008, p. 7). The considerable attention given to 'social justice' and equitable access to education in the Adelaide Declaration is reframed as 'equity' in the MD and placed alongside the goal of 'excellence' (MCEETYA, 2008, p. 3). Several scholars have noted that attaching excellence to equity was intended to lift the performance of all schools—particularly struggling (mostly disadvantaged) schools—through the mechanisms of competition and accountability (e.g., Gorur, 2013; Savage, 2011). This intention was fortified through the launch of a series of related strategies, namely development of NAPLAN, which was released in 2008, and then its inclusion in the launch of the national My School website in 2010 (Lingard, 2010; Reid, 2010a). The national My School website was released amid considerable controversy about including NAPLAN scores, which are aggregated for each school and colour-coded according to the school's level of success (see Mockler, 2012; Niesche, 2015; Reid, 2010b). For example, red is assigned to a school for a particular year if its average score for a literacy or numeracy domain is substantially below similar schools (ACARA, 2016).

The MD also restated the Adelaide Declaration's holistic vision that 'schools play a vital role in promoting the intellectual, physical, social, emotional, moral, spiritual and aesthetic development and wellbeing of young Australians' (2008, p. 4). While the statement provides an opportunity for these comprehensive elements to be included in and across the curriculum, questions have been raised about whether practical structures, pedagogies and teacher capacity inhibits enactment of such an ideal (Lovat et al., 2011). Other barriers to

achieving this vision of schooling relate to the complexity of the educational environment, such as responsibilities for extensive curriculum implementation and the pressure to perform in tests (Wrigley, Lingard, & Thomson, 2012).

The ability to enact a holistic approach to learning in schools is also hampered by an historical legacy that isolates academic learning from a broader holistic context; for example, learning occurs within a social context (Immordino-Yang, 2011; Immordino-Yang & Damasio, 2007). While the MD provides a platform for enacting a more holistic approach to schooling with the inclusion of an extensive range of commitments (Buchanan & Chapman, 2011; Lovat et al., 2011), the continuing effects of mind–body dualism help explain why the 'holistic' rhetoric has rarely been matched in practice.

3.3 Mind and body

The philosophical history of mind and body dualism (the division of two contrasting entities—mind and body) has its recorded beginnings in Athens, with notable links to philosophers and rhetoricians including Socrates (470–399 BC), Plato (428–348 BC), Isocrates (436–338 BC) and Aristotle (384–322 BC) (Rintala, 1991; D. Young, 2005). A legacy of this period—represented in the arguments of Plato and Aristotle—is the dual nature of mind and body, conceptualised hierarchically as mind over body (mind, or nous, or psyche, which was at times referred to as the soul [D. Young, 2005]). These philosophers believed equal attention should be given to mind and body (e.g., literary/artistic matters and gymnastics); however, they emphasised that the body was a hindrance to the soul (Rintala, 1991; D. Young, 2005). Ultimately, the body's inferior status also had a 'distinctive religious value for Christianity'; that is, the body was viewed as an 'impediment to the eventual salvation of the soul' (D. Young, 2005, p. 31). These ideas and beliefs of the ancient philosophers continue to be held by many scholars and theologians (Bennett, 2007).

During the early period of modern history, philosophy and science were significantly influenced by the work of Rene Descartes (1596–1650), further embedding the dualist notion. Descartes argued that the mind (the incorporeal soul) was an intangible non-physical entity distinct from the physical body (yet causally interacting) (Greer, 2003; Shelton, 2013). He also noted that as a distinct physical entity, the body could be studied by scientific methods, whereas the mental state could not (he claimed) and, therefore, the two exist independently (Greer, 2003; Marchant, 2016; Rose, 2009). As a result, 'the mind (was) consigned to the role of a scientific spectator as it (gazed) at an objective and passive material world' (Tauber, as cited in Shelton, 2013, p. 424). Henceforth, the human body, like all other objects in nature, became an impersonal object of scientific enquiry. This period set forth the study of human anatomy and physiology, the application of scientific method and, ultimately, the rise of modern science and medicine (Shelton, 2013). While Descartes is acknowledged for his influence in these areas, the downside was 'the marginalisation of the humanistic side of medicine' (Shelton, 2013, p. 423). More broadly, 'the mischief wrought by (Cartesian)[7] dualism' affected many important domains of society, including education (Phenix, 1959, p. 5).

3.4 John Dewey

Finding a 'way out of the tangle of problems generated by the Cartesian absolutised abstractions' (Phenix, 1959, p. 5), philosopher and educator John Dewey (1859–1952) saw mind–body dualism as a 'profound practical problem throughout modern society' (Shelton, 2013, p. 425). Dewey brought the importance of an individual's engagement and continual interaction within the environment and the social world of others to a prospective post-dualist belief (Phenix, 1959). His notion of 'continuity' was in distinct contrast to dualism, with its

[7] 'Cartesiu' is Latin for Descartes.

‘illegitimate oppositions’, such as ‘knowing vs doing, mind vs body, the child vs the curriculum, objective vs subjective, emotion vs intellect, man vs nature, heredity vs environment’ (Phenix, 1959, p. 5). He noted a certain validity to the logic of opposites but disputed the neglect of the important connections and relationships each category possessed (Phenix, 1959).

Dewey (1897, p. 77) provided a range of arguments with which he sought to bridge the dualist past to a more all-encompassing future in education: ‘I believe that all education proceeds by the participation of the individual in the social consciousness of the race’. He posited that the process of education begins subconsciously at birth and continues along a journey that embraces the intellectual and the moral, and includes the arousal of feelings and emotions. He saw education as not so much about directing the child to the future, or via certain categorisations of subject matter, but as submersion in the now through an integration of concepts, including the social element (Dewey, 1897).

Dewey warned of the ill-effects of mind–body dualism and the need for a new, pragmatic alternative (as cited in Shelton, 2013). In an address to the Academy of Medicine (and subsequent paper on ‘Body and Mind’), Dewey (1928, p. 6) expressed his concern over the separation of science, morals, philosophy and the arts:

> *The evils which we suffer in education, in religion, for example the fundamentalist attack about the evolution of men rests upon the idea of complete separation of mind and body; in the materialism of business and the aloofness of "intellectuals" from life, the whole separation of knowledge and practice; all testify to the necessity of seeing mind–body as an integral whole.*

These observations, which went well beyond the predominant thinking of the time, included a warning about failing to see highly complex behaviour as an integrated whole, including the relegation of personal aspects of healing to a less important status (Shelton,

2013). Dewey (1928, p. 11) believed that in understanding the human organism, we need to account for its history and its development:

> *It is indispensable to note that when we are dealing with human behaviour, the [idea] designates a kind of behaviour in which outcomes of the past and outlook on the future are incorporated; with something longitudinal and not something cross-sectionally lateral.*

He emphasised the need for medical practitioners and educators to acknowledge the life history of individuals, including their intellectual, social and mental being. Otherwise, he said, these encounters simply become 'mechanical', as the longitudinal nature of human behaviour consists of an autobiography, 'not written but enacted', and therefore embraces an intellectual and emotional quality (Dewey 1928, p.12).

In arguing the case for replacing the dualist division with the notion of continuity, Dewey noted the importance of binding the nervous system with mental activity and keeping all bodily activities together. He pointed out that, 'more than any other activity in human society, (medicine) deals with the integration of a complex unity, wherein the human mind and body, and all other dualisms properly understood, are resolved' (Shelton, 2013, p. 436).

This notion of medicine dealing with the unity of human complexity is also closely related to the role of educators. In his writing nearly a century ago, Dewey (1928, p. 18) articulated his unifying view for both professions:

> *The division has affected every subject of study, every method of instruction and discipline. More than anything else it explains the separation of theory and practise, of thought and action. The result is a so-called cultural education which tends to be academic and pedantic, in any case aloof from the concerns of life, and an industrial and manual education which at best gives command of tools and means without*

intelligent grasp of purposes and ends. The consequences of this divided education are writ large in the state of our civilization.

His intent in bringing together the many variables torn asunder through mind and body dualist philosophy over the centuries, was for medicine and education to be more faithful 'to the truth we aim to serve' (Phenix 1959, p.9). His concerns were about the divisions that included the 'hard and fast which mark off social groups and classes within a group: rich and poor, men and women, noble and baseborn, ruler and ruled' (Dewey, 1916, p. 185). In expanding upon a more integrated approach, inclusive of both medicine and education, Dewey spoke of planning for the building of a school. While an architect, engineer, 'hygienist', teacher and public official may join forces, he noted there are many others who should be part of the process, including psychologists (Dewey, 1928).

Despite some movement in the early 20th century, including a growing interest in preschools and schools as social centres, Dewey observed that 'the forces' are still powerful that make for 'centrifugal and divisive education'. The chief of these forces—the separation of mind and body (incarnated in morals, religion and business)—awaits various conceptual reunions including philosophy, science and art with what he notes is the supreme art of all, 'the art of education' (Dewey, 1928, p. 19). However, a century later the divisions remain.

While some scholars view Cartesian dualism as being out of 'scientific vogue' (Nielsen, 2010 p.709), there is nevertheless an admission by many that its influence remains significant. This is particularly the case in the fields of health and medicine (Forstmann, Burgmer, & Mussweiler, 2012; Greer, 2003; Shelton, 2013), and education (Kurth-Schai, 2014; Martínková, 2017). A non-dualist argument sees the mind, brain and body as working together, 'manifest and accessible with different tools, but obey[ing] rules of the same physical universe, a monistic, not dualist, point of view' (Rose, 2009, p. 785). This premise illustrates how 'emotions, cognitions, behaviours, or social factors [can] translate into a

physical disease', and conversely physical disease results in altered emotion, cognition or behaviour (Rose, 2009, p. 785). Equally, research regarding the relationship between various human sociocultural, psychosocial and health behaviours, cognition and educational outcomes is slowly gaining momentum (Bloom, 2005; Butler, Yang, Laube, Kühn, & Immordino-Yang, 2018; Harris, 2010; Immordino-Yang & Damasio, 2007). This work also includes ways to effectively administer such interconnected programs (Blank, 2015; Buijs, 2009; Kolbe, Allensworth, Potts-Datema, & White, 2015). Developing strongly interconnected holistic processes across the fields of medicine, health and education has the potential to provide significant benefits for young people and their communities. The following example from the growing links in medicine extends the notion of the connection between mind and body as it also can be applied to education and effective conditions for student learning.

The subspecialty of oncology in the field of medicine provides a good example of the deep connection that exists between mind and body, and the ways this connection supports the treatment of patients. The treatment process has evolved through the development of 'psycho-oncology' as a critical component of the patient's mindset (Greer, 2003). Greer (2003, p. 11) quotes Hippocrates via a dictum: 'The patient must combat the disease along with the physician'. This precept highlights the remarkable role the patient has through the power of the mind in the healing process; a connectedness that generally continues to grow as medicine evolves in its multidisciplinary approach (Greer, 2003). In a further example of the field of medicine drawing together mind and body, Tibetan medicine extends the notion of 'embodied theories of cognition'; that is, that cognition and its various processes are also shaped by the whole body and its physical and perceptual interaction with the environment (Ozawa-DeSilva, 2011). The evolving model of connected subspecialties in medicine can be extended further to connections that should apply to health and education (schooling); that is,

the range of subspecialties in health are strongly linked to the growth and development of young people as they progress through their schooling. The following section looks at the important link between schooling, health and other agencies in supporting the role of schools in their task of ensuring the broad needs of young people are met.

3.5 Supporting schools: health and other agencies

Weaknesses in the enactment of services and the relationship between agencies in supporting families, particularly in disadvantaged communities, can have devastating effects on families. Notably, poor planning was matched with poor service provision following the establishment of communities in the suburbs of Green Valley and Mount Druitt on the outskirts of Sydney in the early part of the 1960s, resulting in spiralling and cumulative issues (Watson, 2015). Within a decade, Mount Druitt's growing unemployment increased to three times the NSW rate, and female sole parents rose to four times the NSW rate (by the 2016 Census, 82% of sole parents were female). In 1973, the 70,000 people living in Mount Druitt had no public hospital or access to specialist medical services (Watson 2015). The failure of the 'State Planning Authority, local government, the Housing Commission and various state departments such as health, education, and social services', to support 'the kinds of communities which the new settlers had left behind', contributed significantly to a legacy of generational challenges that are still evident today (Watson, 2015, p. 122). By 2016, only 19.7% of people over 15 years had completed the final year of schooling, Year 12 (ABS, 2017b).

Recognising the strong connection between health and education and addressing both through a holistic model is critical for the sustained wellbeing of individuals within society (Callander, Schofield, & Shrestha, 2012; Committee for Economic Development of Australia, 2015, 2018; Schoon, Jones, Cheng, & Maughan, 2012). Poor health can put educational attainment at risk; the social and contextual conditions in which young people begin their

lives affects their education and health (as detailed in Chapter 2). Increasing the level of educational attainment also increases opportunities for better understanding and access to health goals, higher educational attainment, employability and income, and access to health insurance (Center on Society and Health, 2014; Zimmerman et al., 2016). Improved health outcomes lead to improved physical, social, emotional and mental health, which in turn leads to improved educational attainment and quality of life (Basch, 2010; Case, Fertig, & Paxson, 2005).

More meaningful and substantive connections between government departments such as health and education—and their respective joint policy development—have the potential to deliver more efficient and coordinated support for young people and communities. Guidelines to institute meaningful integrated policy have come from global organisations such as the WHO.

The WHO challenges governments around the world to adopt the principle of 'health in all policies' to tackle health inequalities (Fletcher, 2013). The Welsh government, for example, has undertaken a 'mass strategy' approach, with the aim to 'shift the whole population's distribution of the risk variable' (Fletcher, 2013, p. 10). Wales introduced the Public Health (Wales) Bill to law, enacted on 1 April 2016. Its seven wellbeing goals aim to make Wales a healthier place by addressing health inequalities, including physical health with a national obesity and mental health strategy, together with addressing climate change and poverty (Welsh Government, 2015a). The Welsh government argued the case for enacting the Well-being of Future Generations into legislation (the first in the world), which was to ensure the public sector acts on the legislation. The Bill states, 'that future generations [should] have a good quality of life … [therefore] we need to think about the long-term impact of the decisions we make'. And its Sustainable Development Principle(s) include a requirement that action is long-term, preventable, integrated, collaborative and involves all

members of the community with an interest in wellbeing (Welsh Government, 2015a, pp. 4, 7). A commissioner has been appointed to oversee its implementation and to address any concerns or adjustments, as needed. The Act requires indicators and milestones to incorporate both quantitative and qualitative measures, which must be adapted according to their effectiveness as a measure, while adjustments are to be made according to changes in circumstances over time (Welsh Government, 2015a, p. 10).

In the UK, a briefing by Public Health to head teachers targeted the reduction of health inequalities through the promotion of health and wellbeing, with the aim of improving educational outcomes for young people (PublicHealth England, 2014). UK schools have a statutory requirement to provide a curriculum that 'promote(s) the spiritual, moral, cultural, mental and physical development of pupils at the school and of society' (Public Health England, 2014, p. 5). 'Public Health England's' briefing to head teachers provided supportive evidence (Bradley & Greene, 2013; Suhrcke & de Paz Nieves, 2011) of the close link between health, wellbeing and academic success (readiness to learn) and included effective social and emotional competencies; that is, the culture, ethos and environment of the school, as well as the positive association between academic attainment and physical activity. The briefing was fortified with evidence of the link between learning success and improved levels of wellbeing into adulthood (see also Parliament of the United Kingdom, 2002, 2010).

In Australia, the South Australian state government has led a Health in All Policies Initiative across a range of agencies that has the potential to provide more integrated and effective support for families and communities. The 'aim is to improve the health and wellbeing of South Australians by strengthening cross-government action on the social determinants of health' (South Australian Health, 2013 p.5). The approach recognises the complexity of policy implementation in solving community problems, while the briefing notes associated with the initiative point out that there often multiple causal factors beyond

the scope of one agency to address. The initiative uses a Health Lens Analysis model (engage, gather evidence, generate, navigate and evaluate) to develop and implement projects, such as an educationally based 'parental engagement with literacy' focus in disadvantaged communities (p.8). The program's aim is to support the improvement of literacy outcomes for children in the early years of schooling through the support of parents. While acknowledging the success of the cross-government process, evaluation of the project identified several challenges, including a disjuncture between policy development, program implementation and service delivery, as well as a need to ensure community views are considered fully.

Victoria's current state education strategic plan (2017–2021) provides a good example of an attempt to implement a proactive, holistic approach to education. For example, two of the four key objectives in the plan are to 'work with providers and partners to build an integrated birth to adulthood education and development system', and 'support children, young people and adults with well-coordinated universal and targeted services close to where they live' (Victoria Department of Education and Training [VicDoET], 2017, p. 3). The strategic plan also focuses on increased participation in early childhood education, with targets set on improved early development indicators (AEDC, 2017) before children enter school, including social, emotional and behavioural competencies (VicDoET, 2017). In addition, the plan includes a 'focus on mental and physical health and wellbeing as an integral part of learning and development' (VicDoET, 2017, p. 9). Moreover, the organisational reform approach to the plan is seen as shared responsibility with joint accountability. The NSW Department of Education strategic plan similarly specifies a goal of increased early-school enrolment. However, there is no further expansion of the strategies in this document, or clear indication of any goals or targets that are more holistically oriented to support the development of young people (NSWDoE, 2018).

Providing complementary and integrated community-based health support for school communities requires integrated well-prepared services. Such provision is important in ensuring targeted health needs are addressed and access for students and families is readily available across a range of health fields. Identified health barriers affecting learning can vary considerably across a large range of medical indicators and, therefore, require an initial primary health care model for effective screening and referral (Buijs, 2009; Fast, Gray, & Miles-Koehler, 2013; Strolin-Goltzman, 2010). Attempts in Australia to develop a connected primary health care services model began in 2011 with 'Medicare Locals' (Henderson et al., 2018; Horvath, 2014). This initiative aimed to improve the delivery of health services, with a specific focus on equity and improved health outcomes through the coordination of local medical services. A review of the initiative was undertaken in 2014 and 'Medicare Locals' was eventually replaced by 'Primary Health Networks', which sought to better integrate and coordinate the focus of primary care within designated communities (Horvath, 2014). The Horvath Review noted that the health system faced major challenges in Australia, with lower life expectancies for a range of disenfranchised groups including those living in disadvantage. Patients with complex conditions were often unable to navigate the health system or were faced with information gaps and fragmented services (Dennis, Noon, & Siaw Teng, 2016; Fast et al., 2013; Horvath, 2014; Williams & Dickinson, 2017). Horvath (2014, p. 2) argued for primary health care to move from an 'episodic, siloed system to an integrated, coordinated, patient-centred system'. Attempts to support young people and their families in disadvantaged communities through connected health services in or near the school site would greatly assist strategies to support a range of educational outcomes (Nordtveit, 2008; Strolin-Goltzman et al., 2012).

Integrated whole-school health and education models have been attempted over recent decades and with varied success. In seeking to understand how similar models of integrated

support for families may work successfully in the future, an understanding of these recently developed approaches will be addressed in the following section.

3.6 Integrated models of support for schools

Attempts at delivering a more integrated and comprehensive approach to student learning and development at a community level have achieved varying success. For example, there is considerable literature related to the provision of a supportive school environment in the Health Promoting Schools (HPS) model (Dooris, 2006; Jané-Llopis & Barry, 2005; Lynagh, Knight, Schofield, & Paras 1999; McCall, Rootman & Bayley, 2005; Räihä et al., 2006; Rissel & Rowling, 2000; Rowe, 2017; Rowling & Jeffreys, 2000; St. Leger, 2002, 2005; Thomas & Weng, 2005; Wagner, 2002; I. Young, 2005). The HPS model emerged from the WHO Ottawa Charter for Health Promotion—first International Conference on Health Promotion in Ottawa (WHO, 1986). According to the WHO model, health promotion is the process of enabling people to reach a state of 'complete physical, mental and social well-being' (WHO, 1986, p. 1).

The HPS model developed 'primarily as a response to growing expectations for a new public health movement around the world', and as a strategy linked to the WHO 'Health for all by the year 2000 initiative', launched in 1981 (WHO 1986, p. 1). Connections between the health of students and their capacity to benefit from educational experiences 'are now well established' (Cushman, 2008, p. 231). The HPS concept aims for people to increase control over and improve their health. To establish an authentic school-based HPS concept, WHO specified the need for a broad set of strategies that included the creation of a comprehensive supportive environment for young people; the development of personal skills; involvement of health services; and the active contribution of the community, particularly students (WHO, 1986).

The success of HPS has been highly dependent on an ability to link the multilayered approach to effective implementation (Cushman, 2008), with the assistance of both health and education sectors. Traditionally, the health sector has been responsible for the introduction of the model, while gaining traction in schools relies on a school staff member or (preferably) team for implementation. Unfortunately, the support of multilevel contributions (such as inter-agency and various levels of political support) to ensure its success has meant that HPS, as a movement, has not been fully realised (Cushman, 2008; Rowling & Jeffreys, 2000). Effective evaluation processes and strong and committed leadership across sectors is required to enable commitment in busy schools and to ensure whole-school community involvement maintains a consistency of purpose (Turunen, Tossavainen, Jakonen, & Vertio, 2006).

While the HPS initiative enabled schools to embrace a more comprehensive commitment to health in an educational environment, the Full Service Schools initiative sought to more directly utilise the services of other agencies within the educational environment. This initiative evolved towards the end of the 1990s in the USA and UK (Dryfoos, 1995; Edelman, 1996). It sought to 'address the multiple factors that heavily impact student achievement by incorporating services at the school site to provide academic and non-academic support' (Campbell-Allen, Pena Aekta Shah, Sullender, & Zazove, 2009 p.1). Dyson (2011, p. 178) points out that educational outcomes are shaped by a range of non-educational factors and 'the consequence is that heroic assumptions about the capacity of education system improvement alone to overcome the effect of these non-educational factors have come to seem increasingly unsustainable'. He argues that wide-ranging strategies need to be 'accompanied—or preceded—by efforts to tackle other aspects of social and economic inequality' (Dyson, 2011, p. 178).

The full service school model is formed around a community school concept, where the school becomes the centre of the community and is open to all members over a full week (Campbell-Allen et al., 2009). The model seeks to capitalise on under-utilised services through access in the form of a 'one-stop-shop' targeted for people most in need. The initiative also engages extended programs, such as before and after school care, and the use of health agencies that support, for example, mental and dental health (Campbell-Allen et al., 2009; McMahon, Ward, Kline Pruett, Davidson, & Griffith, 2000). In the UK, the model has morphed into a Full Service and Extended Schools (FSES) concept (Dyson, 2011), which aims to build improved school capacity by embracing a range of areas including child, family and community contexts to improve the lives of children and families, and the areas in which they live. Arguing the benefits of the concept relies on successfully integrating services. Each service views its organisation, processes and outcomes in different ways. Identifying clearly defined local needs and drawing together the necessary structures, requires strong coordination at the local level in conjunction with broader political support and leadership (Dyson, 2011; Dyson & Todd, 2010; McMahon et al., 2000; O'Looney, 1996). Dyson (2011, p. 189) argues that to fully embrace a model based on the FSES concept, 'it may be necessary to reconceptualise what schools are', so that schools 'can be marshalled into potentially powerful strategies for tackling (at the local level, at least) some of the structural underpinnings of social and educational disadvantage' in communities.

Localised and contextualised community-based models under local governance may offer a way forward for communities in breaking the nexus of social disadvantage and its wide-ranging effects (Harris & Ranson, 2005). One such example in Australia is in the city of Brimbank, a local government area in the western suburbs of Melbourne. The city is culturally diverse and one of the largest industrial areas in Melbourne. It has higher than average rates of obesity, twice the prevalence of diabetes, lower than average rates of

engagement in physical activity and lower than average academic outcomes. The Brimbank City Council and the Mitchell Institute for Health and Education (Victoria University) launched the 'Growing Brimbank' collaboration to lift health and education outcomes in the community (Leung, 2015). The aim was to establish place-based approaches, targeting the entire Brimbank community and addressing issues at the local level. The collaboration was designed to highlight the complex interactions between sociocultural and physical environments and their effects on the education, health and wellbeing of community members, to provide a more grounded direction for future planning. Such comprehensive attempts at a local level are supported conceptually by scholars who argue for key community members to be a strong voice in shaping such efforts, particularly as they align with a clear view about the purpose of schooling (Dyson, 2011; Raffo & Dyson, 2007; Raffo et al., 2009).

Finally, a key global stakeholder in monitoring health equity and its derivative benefits is the WHO. Through the Commission on the Social Determinants of Health, the WHO (2008, p. ii) was created 'to marshal the evidence on what can be done to promote health equity and to foster a global movement to achieve it'. The Commission takes a holistic view of the social determinants of health and recognises 'the unequal distribution of power, income, goods, and services, globally and nationally, and the consequent unfairness in the immediate, visible circumstances of peoples' lives' (WHO, 2008, p. 11). Therefore, the focus is to improve the daily lives of people and, particularly to invest 'in the early years (which) provides one of the greatest potentials to reduce health inequities within a generation' (WHO, 2008, p. 4). An early child development (ECD) approach, including a focus on the physical, social/emotional and language/cognitive domains, 'has a determining influence on subsequent life chances and health through skills development, education, and occupational opportunities' (WHO, 2008).

3.7 Summary

The literature reviewed in this chapter has addressed the purpose of schooling in Australia and demonstrated that the MD, while underpinned by many political imperatives, provides key directions and commitments to guide schooling. Returning to a focus on purpose highlights the necessity for governments and policy-makers to demonstrate consistency between the rhetoric employed and their actions in supporting the broad educational community, particularly those living in disadvantaged communities.

The opportunity to bind the multiple dimensions of human development within a complex environment requires moral and courageous political leadership and policy making to ensure future schooling in Australia is fair, equitable, accessible and ultimately more broadly successful. There is also a financial benefit to the economy where such 'hip-pocket' discussion will often win political points. Sadly, the expediency that comes with political ego and 'short-termism' finds such common-sense arguments not forthcoming, as is evidenced in more recent attempts at a review of the Melbourne Declaration (Australian Education Union, 2019). As observed in this chapter and reinforced recently in the current attempt at a review of the MD, it is reported that the 'goals of the existing Declaration have not yet been achieved' and the Victorian Education Minister has at one point refused to be part of the discussion under such circumstances (AEU, 2019). Attempting to develop a new Declaration would seem rather constrained and therefore perhaps futile.

The range of evidence presented in this thesis provides a sound argument regarding the responsibility of authorities to ensure appropriate allocation of time, energy and resourcing at a national, state and local level, that includes strengthened integrated support structures and ensuring the viability of the environment in which all people live and work (space and place). Equally, as John Dewey observed, is the importance of learning as an intellectual exercise embraced within emotional, social and moral support structures.

The basis of current schooling concerns has also been shown as located in the time of mind–body dualism, which arguably underpins current fragmented approaches to the development of young people. The argument provided by many, including John Dewey, is that education policy-makers and educators need to think and act more holistically. However, progress towards holistic education has been slow and disjointed, despite evidence on the importance, for example, of a close relationship in communities between such public entities as health and education.

This chapter also outlined attempts to provide a more holistic approach to schooling, such as Full Service Schools and HPSs. It has also noted attempts by some governments (e.g., in Wales and South Australia) to provide a 'health in all polices' initiative to better support individuals and families. There are also attempts in some communities to build integrated and contextualised community-based models, where schools, agencies (such as health and local services) and communities work in conjunction with universities and researchers to build education around a range of local comprehensive human development data. Such models require careful planning and leadership.

In the following chapter, I present the methodology for the three interrelated studies undertaken in this thesis to explore the issues facing disadvantaged high schools in achieving effective educational outcomes.

Chapter 4: Methodology

4.1 Overview

This chapter provides a background to the methodology of three interrelated studies:

- Study 1. The feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school.
- Study 2. Cross-sectional analysis of the physical, social and emotional wellbeing factors associated with academic performance in a sample of students from disadvantaged high schools.
- Study 3. An analysis of the perceptions of principals in disadvantaged high schools about the purpose of schooling and the approach to achieving effective educational outcomes.

4.2 Methodology

The focus for these studies was to examine factors associated with educational outcomes in disadvantaged communities, underpinned by a theme of a connected whole-person approach to schooling.

The studies utilise three methodological approaches: quasi-experimental study design of a health intervention (Study 1); quantitative cross-sectional survey (Study 2), and qualitative semi-structured interviews (Study 3). A mixed methods approach was undertaken to provide a quantitative assessment of any changes in student academic assessments resulting from an intervention and a qualitative exploration of participants' in regard to acceptability of the intervention. Mixed methods provide a 'powerful mix' (Creswell, 2008, p. 552) of quantitative and qualitative approaches to enlist 'the most informative, complete, balanced, and useful research results' (Johnson, Onwuegbuzie, & Turner, 2007, p. 129).

While acknowledging the power and increasing use of mixed methods research over recent years, particularly in social and behavioural sciences, it is useful to also acknowledge the complementary basis of each of its components (Collins, Onwuegbuzie, & Jiao, 2007; Poth & Onwuegbuzie, 2015).

The positivist philosophical basis of quantitative methodologies argues that researchers should remain 'detached and uninvolved in the object of study' to reliably test the stated hypotheses (Johnson & Onwuegbuzie, 2004, p. 14). Qualitative purists (or constructivists) argue an alternative to the positivist approach and support an interpretivist paradigm in which the researcher is trying to understand multiple constructed subjective realities (Johnson & Onwuegbuzie, 2004). They argue that 'time and context-free generalisations' are neither desirable nor possible and that causes and effects in research are 'value-bound' and impossible to fully differentiate (Johnson & Onwuegbuzie, 2004, p. 14). Equally, the challenges associated with ensuring fair 'representation' or capturing the 'lived experience via social texts' in qualitative research are recognised (see Collins et al., 2007, p. 268). However, quantitative researchers typically maintain the need to eliminate bias and argue that empirically testing a stated hypothesis maintains suitable objectivity. Such 'rhetorical neutrality' leads to a formal writing style in which the 'impersonal passive voice' and technical terminology are upheld (Johnson & Onwuegbuzie 2004, p. 14). Mixed methods research has the advantage of drawing on the strengths and weaknesses of both and is understood to provide a great balance of the two methods (Johnson & Onwuegbuzie, 2004, p. 15).

4.3 Study 1: The feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school

4.3.1 Background

This study was based on the understanding that undiagnosed or poorly managed health issues of young people in disadvantaged communities are adding an additional barrier to the achievement of their educational outcomes. The high school at the centre of this study is situated in south-west Sydney and serves a very disadvantaged population. Anecdotally, the school noted that many of the resultant health issues often correlated with poor learning habits and a range of unrealised educational outcomes. For example, students manifested symptoms of hyperactivity, FASD, inability to concentrate, poor verbalising skills, poor sleep habits, inadequate diet and exercise, abusive behaviours, physical violence, multiple suspensions, poor learning outcomes and, in some cases, were victims of abuse and had a significant number of school movements. Consequently, there was often poor continuity in tracking their learning and health interventions, and little to no forwarding information.

In 2012, the school designed and introduced the Healthy Learner project (i.e., a registered nurse). The project was not grounded on a theoretical model. Rather, there was a desire not to replicate a traditional role in which, for example, the school nurse was linked to a specific student illness or to day-to-day minor injuries as minor health issues are usually covered by a school office assistant (first aid). The impetus and direction for the Healthy Learner role was to design a proactive, early intervention model for new Year 7 students and any suspected cases in the school requiring health or medical attention, particularly where those cases were possibly related to poor learning outcomes. A single group pre-test post-test study design was employed to test the efficacy and feasibility of the proposed intervention.

4.3.2 Study aim

The aim of this pilot study was to determine the effectiveness and acceptability of adding an experienced health nurse to the learning support team of a disadvantaged high school.

4.3.3 Research objective and questions

What is the feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school?

Research questions:

1. What are the number and type of health problems identified in the children screened and the health services required by the students?
2. Has there been a change in learning outcomes in response to the intervention by the nurse in addition to the learning support?
3. What has been the experience of being involved in the project for the students' parent/guardian and staff?

4.3.4 School intervention

Health assessments commenced at the school in 2012. The focus was on low-performing Year 7 students, and later demand required students in Years 7 to 9 also be screened. For identified or referred students, the nurse conducted a health assessment, which included a brief medical history and covered hearing, vision, dental, anthropomorphic measurements and mental health, as requested by the school. The child and family were also provided with an opportunity to raise any other health issues with the nurse. Following the assessment each student was provided with a personal plan and referrals were organised as necessary. These referrals were to general practitioners and specialist medical centres and included a wide range of medical and health-based specialties. Cost of services were negotiated in each case with the medical sector by the registered nurse, as costs are often an

inhibiting factor in follow-up for families, particularly where bulk billing arrangements are not in place (Dalziel, Huang, Hiscock, & Clarke, 2018). The students also received integrated educational support from the learning support team. The targeted students were part of a larger group in the Year 7 cohort that required learning support. Consistent follow-up to the initial intervention and plan were undertaken in each case and the specialist learning support staff noted any changes during and following the intervention.

In 2012, the school began the process of formalising a research project about the concept. At the time of the study, attempts at introducing a nurse model in schools had shown promising signs in the US, including policy development regarding the role (Bonaiuto, 2007; Engelke, Guttu, Warren, & Swanson, 2008; National Association of School Nurses, 2016).

The study was approved by the ethics committee of the University of New South Wales (HC12443) and NSW Department of Education State Education Research Applications Process (SERAP 2013164).

4.3.5 Research participants

In 2012, all students entering Year 7 who had NAPLAN scores in the lowest quartile for the cohort, and well below the national average, were eligible for inclusion and invited to attend a health assessment with the nurse. The sample size for the pilot study was determined by the capacity of the nurse working part-time to assess the students. A group of 25 students who recorded the lowest NAPLAN scores in the cohort were the target for assessment by the nurse. A parent or guardian attended the appointment with the student and gave their written informed consent to be included in the assessment. By 2013, the demand for the service had increased, and the inclusion criteria was modified to include students according to need from within the Years 7–9 cohort by referrals via the school's student support services team.

The high school sent invitation letters to all the parents/guardians of the children assessed by the nurse. Several families the nurse had worked with intensively in this group

subsequently moved out of the area and no longer attended the school. Five parents /guardians were interviewed. A purposive sample of five staff from the student support services team (and learning support staff), which included a school counsellor, head teacher, senior executive and the nurse, were invited to take part in semi-structured interviews with the researcher. All those interviewed were female.

4.3.6 Quantitative evaluation

The measures used in the pilot study included the number and type of health problems identified and the health services required. NAPLAN bands were used to determine whether there was a change in educational outcomes before and after the intervention by the nurse. The NAPLAN assessments are conducted mid-year for all students across Australia in Years 3, 5, 7 and 9 (ACARA, 2017). All students in the same year level are assessed on the same test items in the assessment domains of reading, (persuasive) writing, language conventions (spelling, grammar and punctuation) and numeracy. NAPLAN results are reported using five national achievement scales, one for each of the NAPLAN assessment domains of reading, writing, spelling, grammar and punctuation, and numeracy. Each scale consists of 10 bands, which represent the increasing complexity of the knowledge and skills assessed by NAPLAN from Years 3 to 9. Six of these bands are used for reporting student performance in each year level. Student raw scores on tests are converted to a NAPLAN scale score so those scores can be located on the national scale for each domain (ACARA, 2017). Regarding the assessment's reliability, the coefficient alpha for Year 7 reading assessment is reported as 0.87, with 0.92 for numeracy (ACARA, 2014). However, there is some caution noted regarding interpretation of the assessments, as they are based on approximately 40 items in each assessment area (administered on one occasion a year), and growth measures are reported as having a margin of error greater than one year's growth (Wu, 2009, 2010).

The school uses two assessments to support students who require learning intervention. They include Neale (ACER 1999) (a measure of the accuracy, comprehension and rate of reading; monitoring of reading progress and diagnostic observations of reading behaviour) and Probe (ACER 2011) (an assessment of reading accuracy, reading behaviour and in-depth reading comprehension (Parkin & Parkin, 2011). These assessments are conducted pre- and post-intervention with the learning support team. Data from the school regarding these assessments were not included in the current study.

4.3.7 Qualitative evaluation

Semi-structured interviews were conducted with parents or guardians of the children assessed by the nurse to determine their views on the program and to discuss the impact on their child and themselves. The parents were interviewed over the telephone and the staff face-to-face. All interviews were digitally recorded and transcribed verbatim and all participants provided written informed consent.

Participant interview questions were designed and guided by the construct of candidacy (see Table 4.5). This construct has been used in numerous studies to describe the challenges faced by disadvantaged populations when accessing health services (Dennis, Hasan, Jackson Pulver, Wilson, & Zwar, 2014; Dixon-Woods et al., 2006; Peiris, Brown, & Cass, 2008; Peiris et al., 2012). Candidacy has been defined as 'the ways in which people's eligibility for medical attention and interventions is jointly negotiated between individuals and health services' and details of the domains are in Table 4.5 (Dixon-Woods et al., 2006, p. 7). Questions to participants, as guided by candidacy, were based on their ability to:

- identify or recognise whether a health or medical issue was present, and how to go about solving it
- know about and find the relevant service to match the health or medical problem, and effectiveness of being able to connect to the appropriate service

- navigate the complexity of the health system, including the referral process and costs, as well as being able to articulate the problem
- effectively make a case to the health professional and maintain a relationship that is not affected by a power differential
- follow the course of the medical problem and not be impacted regarding adjudication by the health professionals that may include any judgement perceived to be based on disadvantage
- have an impact including the degree of acceptance of the service provided.

4.3.8 Data collection

Interviews with students, teachers and parents were undertaken by the health researcher in collaboration with this researcher. The interview questions were aligned to the candidacy framework chosen to guide the study. Also, while the orientation of the study was to both health and education outcomes, there was an emphasis in interviews on the health aspect including accessibility to health services. Records were kept of all visits, referrals and follow-ups by the nurse and were collated for each student as a requirement of the school. NAPLAN data was accessed through the NSW DoE (2012 for Year 7 and 2014 for Year 9).

4.3.9 Data analysis

The quantitative data were analysed using SPSS (Version 22.0, 2013). Descriptive statistics were used to describe the number of health problems and services used. Data for this analysis was collected from records kept by the nurse as part of school requirements. The interview transcripts were coded using NVivo qualitative data analysis software (QSR International Pty Ltd. Version 10, 2012) according to the emerging themes in relation to the construct of candidacy. Following the transcript coding, the themes and findings were discussed with the research team and the coding modified to reflect additional themes and ideas emerging from the interviews. These additional themes are provided in the results.

I initiated and developed the nurse intervention project and sought to evaluate the intervention through a collaboration with the Ingham's Institute for Applied Medical Research. I asked two medical researchers to be part of the project to assist in the health dimension of the study, and Associate Professor Sarah Dennis to lead the interviews to distance myself from any possible bias.

4.4 Study 2: Cross-sectional analysis of the physical, social, and emotional wellbeing factors associated with academic performance in a sample of students from four disadvantaged high schools

4.4.1 Background

A quasi-experimental study design was used to investigate the various elements of the whole-person model and their association with academic performance. A convenience sample of four disadvantaged high schools were used for the study due to accessibility to the researcher while also fulfilling the criteria for disadvantage. The sample included the Year 7 cohort (2012) in each school. The schools were in a cluster of similar socio-economic demographics, and each principal was invited to be part of the study on behalf of their school.

4.4.2 Study aim

The aim of this study was to determine associations between each of the physical, social and emotional wellbeing of young people and academic achievement.

4.4.3 Research objective

What is the impact of incorporating the elements of a whole-person approach in disadvantaged high schools?

4.4.4 Participants

The four high schools are situated in a disadvantaged community in the south-west region of Sydney. According to the FOEI, all four schools were located within the range of

3–18% of the most disadvantaged urban schools in NSW. Table 4.1 outlines demographic characteristics regarding disadvantage for each school and is aggregated for the purposes of subsequent discussion. Two measures of disadvantage were used, the ICSEA and FOEI, both of which are explained below.

The participants and parents/caregivers were issued with information about the study and provided with permission and consent forms prior to commencement. As return rate was anticipated to be difficult and generally poor, opt-out consent was used. A note was made on the permission form to contact the researcher or school if seeking not to participate, or if there were any concerns. There were no subsequent issues regarding student participation in the research study.

Table 4.1: Demographic characteristics of schools in study

School	FOEI[a]	Disadvantage[b]	ICSEA[c] (SES)	ATS[d]	Low¼[e]	Mid¼[e]	Total½	Mid¼[e]	Top¼[e]
100	180	3.5%	877	14%	73%	21%	94%	6%	0%
200	134	18%	945	4%	50	30	80	17	3
400	141	14%	934	3%	57	26	83	15	2
500	163	7%	906	4%	66	23	89	9	2

[a] Average = 100; range 0–300 (least to most disadvantaged); SD = 50
[b] Within the percentage range of most disadvantaged NSW public schools
[c] Average = 1000; general range = 800–1200 (least to most advantaged)
[d] Aboriginal and Torres Strait Islander
[e] Disadvantage/advantage quartile

ICSEA, which was developed for the My School website (launched in 2010), arguably enables fair comparisons of NAPLAN results across all Australian schools, according to ACARA (2015). The median value is 1000 with a standard deviation of 100. ICSEA values range from approximately 800, representing extreme educational disadvantage, to approximately1200, representing schools with students from very educationally advantaged backgrounds. Key factors in students' family backgrounds (parents'

occupation, school education and non-school education) have an influence on students' educational outcomes at school. In addition to these student-level factors, research has shown that school-level factors (a school's geographic location and the proportion of Indigenous students a school caters for) need to be considered when summarising educational advantage or disadvantage at the school level. ICSEA provides a scale that numerically represents the relative magnitude of this influence, and is constructed using both student- and school-level factors (ACARA, 2015).

FOEI is a school-level measure of relative socio-economic disadvantage. It has been developed using students' parental education and occupation information provided on enrolment forms in NSW public schools. FOEI values range between 0 and 300, with higher values representing higher levels of disadvantage. The average FOEI value across all NSW government schools is 100. The standard deviation of FOEI values is 50. This means FOEI values range between 50 and 150 for approximately two-thirds of schools. The remaining one-third of schools have FOEI values either below 50 or above 150 (Rickard & Lu, 2014). The FOEI measure also provides additional data that allows for a broader understanding of context; for example, 50% of homes in the community of one of the four schools had no adult in employment during the period 2012/13 and 32% of adults had not gained an education level above Year 9 (Rickard & Lu, 2014).

This research project was approved by the University of Newcastle Human Research Ethics Committee, (Approval No. H-2011-0079) and the NSW DET SERAP (Approval No. 2011112).

4.4.5 Study measures

This study was designed around the assessment of three student-centred whole-person elements: physical, social and emotional wellbeing.

4.4.5.1 Physical wellbeing

For the purposes of this study, the physical wellbeing element was operationalised as cardiorespiratory fitness (CRF). CRF is the ability of the circulatory and respiratory systems to provide oxygen to skeletal muscles during sustained physical activity (US Office of Disease Prevention and Health Promotion, 2018) and is considered a very strong indicator of current and future health status (Mayorga-Vega, Aguilar-Soto, & Viciana, 2015). CRF reduces the risk of many diseases, assists participation in sport, has a significant positive influence on a range of health indicators and aids in the ability to undertake daily activities (Donnelly et al., 2016). Moreover, numerous systematic reviews have revealed positive associations between CRF, cognition and academic achievement in young people (Donnelly et al., 2016; Marques, Santos, Hillman, & Sardinha, 2017). Of note, a recently published large-scale longitudinal study of middle school youth in New York found that chronic absenteeism was associated with decreases in fitness from the prior year, having noted that absenteeism is well documented to predict academic performance (D'Agostino et al., 2018).

Researchers have highlighted the difficulty of measuring physical fitness for young people using valid and reliable measures (Institute of Medicine of the National Academies [IMNA], 2012; Plowman, 2014). The progressive shuttle run (also known as the multi-stage fitness test) is considered the most appropriate field-based measure of CRF (IMNA, 2012).

As such, the 20m progressive shuttle run test was selected to assess students' CRF in the current study. This test is regarded as valid, reliable and feasible for use in the school setting (IMNA, 2012; Mayorga-Vega et al., 2015),

The shuttle run is performed in the following way: participants are required to run between two lines 20 m apart, while keeping pace with audio signals emitted from a pre-recorded CD. The pace is 8.5 km/h and increases by 0.5 km/h per minute. Participants are instructed to run in a straight line, to pivot on completing a shuttle and to pace themselves in

accordance with the audio signals. Participants are encouraged to keep running as long as possible throughout the course of the test (España-Romero et al., 2010). The number of completed laps is recorded as the test outcome.

4.4.5.2 Social wellbeing

In this study, the social wellbeing element was operationalised as students' satisfaction with school life. Social wellbeing is viewed as an individual's ability to interact with confidence with others, objects and events within the person's environment, and is shaped by their ability to co-exist in a range of individual and group settings (see Edwards, 2005, 2007). The desire and need for a reliable and validated instrument to assess student satisfaction with school life, led to the conceptualisation of the Quality of School Life (QSL) assessment tool as proposed by Epstein and McPartland (1976). The Epstein model defines QSL in terms of three dimensions: satisfaction with school in general, commitment to school work and attitudes towards teachers (Epstein & McPartland, 1976; Sun-keung Pang, 1999). The quality of students' experience of school is affected by the way a school provides a welcoming environment and culture (Sun-keung Pang, 1999). Subsequent adaptions of the QSL model have been developed and include attitudes to the school curriculum and classroom climate (Ainley et al., 1986). Model development has been further refined in Australia, and the construct validity of the QSL for use with secondary students has been supported by empirical evidence (see Mok & Flynn, 2002). Cronbach's alpha coefficients (internal consistency reliability) for the subscales used with the secondary student model range from 0.67 to 0.89 (Kong, 2008; Mok & Flynn, 2002). The measure was chosen as an instrument for this study as a way of capturing an understanding of student social wellbeing.

Social wellbeing measure: QSL (ACER, 2007). The instrument consists of a 40-item survey with four additional school-designed questions. Students respond to a series of statements by indicating their level of agreement on a four-point Likert scale by choosing one of the four alternatives: definitely agree, agree, disagree, or definitely disagree.

Subscales for the QSL questionnaire are presented in Table 4.2.

Table 4.2: QSL questionnaire subscales

Subscale	**Description**	**Typical item**
General satisfaction (or positive affect)	Reflects favourable feelings about school as a whole.	My school is a place where I really like to go each day.
Negative affect	Refers to negative feelings about school.	My school is a place where I feel worried.
Aspects of schooling	**Description**	**Typical item**
Teachers	Refers to a feeling about the adequacy of the interaction between teachers and students.	My school is a place where teachers take a personal interest in helping me with my school work.
Relevance (previously called opportunity)	Represents a belief in the relevance of schooling for the future.	My school is a place where the things I am taught are worthwhile learning.
Success (sometimes called achievement)	Reflects a sense of confidence in one's ability to be successful in school work.	My school is a place where I always achieve a satisfactory standard in my work.
Status	Indicates the relative degree of prestige accorded to the individual by significant others within the school.	My school is a place where I know people think a lot of me.
Social integration (previously called identity)	Concerned with a sense of learning about other people and getting along with other people.	My school is a place where I get on well with other students in my class.

4.4.5.3 Emotional wellbeing

In this study, the emotional wellbeing element was operationalised to social and emotional competence. Emotional intelligence (EI) can be defined as a series of abilities relating to how we understand, express, utilise decision-making processes and manage emotions. Children develop their capacity and increase their ability to understand, effectively express and manage emotions as they get older, although there is great variability among children and adolescents (Swinburne University of Technology, 2018).

The Swinburne University Intelligence test (Adolescent Self-Report Version) or A-SUEIT was designed to assess how effectively adolescents deal with their emotions, with students responding in terms of how they typically feel, think and act (Luebbers, Downey, & Stough, 2007), is a modification of the Swinburne University Emotional Intelligence Test (SUEIT) (Palmer & Stough, 2001), adapted to ensure verbal accessibility of the items (Billings, Downey, Lomas, Lloyd, & Stough, 2014; Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008; Luebbers et al., 2007). The A-SUEIT has shown internal reliability coefficients for the four subscales of A-SUEIT with a range from $\alpha = .75$ to $\alpha = .85$ (Luebbers, Downey & Stough, 2007).

The A-SUEIT is a self-report questionnaire comprising 57 items that correspond to four subscales (see Table 4.3). Each item requires participants to indicate how they typically thought, felt or acted using a five-point scale, where 1 = 'very seldom' and 5 = 'very often'. A higher subscale score reflects a higher proficiency for that EI skill set (Luebbers et al., 2007):

Table 4.3: A-SUEIT subscales

Subscale	Number of items	Typical item
Understanding emotions of others (UEO)	19	I can tell how others feel by the tone of their voice.
Emotional recognition and expression (ERE)	10	I can tell others how I feel about things.
Emotional management and control (EMC)	18	I find it hard to think clearly when I am worried about something.
Emotions direct cognition (EDC)	10	I use my 'gut feelings' when I try to solve problems.

4.4.5.4 Intellectual wellbeing

The intellectual wellbeing element refers generally to students' ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning and to overcome obstacles with conscious thought (Neisser et al.,

as cited in Goldstein, 2013, p. 133). While the guide to the purpose of schooling in Australia is commonly referenced to the MD (MCEETYA, 2008, p. 4), the various elements of the whole person referred to in the document include 'intellectual wellbeing' of young people. However, reference in NSW state education documentation uses the construct 'cognitive wellbeing' and defines this as 'associated with achievement and success, [and] includes how information is processed and judgements are made, [and] is also informed by motivation and persistence to achieve…[and] cognitive wellbeing is important for attaining knowledge and experiencing positive learning.' (NSWDoEC, 2015, p. 3). The measure commonly used in Australia to determine an outcome for the intellectual or cognitive wellbeing element, is through standardised assessment in the form of NAPLAN.

In this study, the intellectual element was operationalised as students' literacy (reading) and numeracy skills, using NAPLAN test results. Information regarding NAPLAN is detailed in Study 1.

4.4.6 Data collection

Assessments in each of the four schools was undertaken by a small team led by two highly experienced physical education teachers, supported by two assistant teachers. The candidate provided the assessment team with detailed training to ensure consistency of test administration. Before completing the physical tasks, the assessment team explained the process to students and prompted them to complete each task. A process was determined in which instructions for each of the written tasks were read to students in the same way in each school, and examples of how to answer each of the questions were provided. The four personnel then assisted and encouraged the students. A review was undertaken at the end of each school's assessment period and arrangements made to revisit schools where students were absent on the day. Collected data were entered in Excel by support staff who were provided with specific training and sampling of entry processes by this researcher.

4.4.7 Analysis

Demographic characteristics of the sample were examined using descriptive statistics, with Fisher's exact test used to determine if there was uniform proportional distribution among demographic characteristics across the sampled schools. Whole-person variables were examined using descriptive statistics, with one-way analysis of variance performed to assess significant differences between the samples from each school. Due to the differences in sample size among the school samples, post-hoc analysis of significant differences between school samples was undertaken using Gabriel's test (Field, 2009). Analysis was conducted using SPSS version 24, with significance levels set at $p < .05$.

Multilevel linear regression models were used to assess the associations between: (i) demographic and (ii) potentially modifiable (whole-person) variables with the academic outcomes of NAPLAN reading and numeracy. To account for the correlation of students within the same school, a random effect/clustering variable for the school of a participant was included as a level-two predictor. Bivariate models were tested to inform the multivariable models. In the first step, each predictor variable was entered separately into the multi-level regression models. In the second step, variables displaying significant ($p < 0.05$) or near significant ($p < 0.2$) association with the outcome variable were included in the multivariable model. Analysis was undertaken using Mplus version 7.4, with significance levels set at $p < .05$.

4.5 Study 3: An analysis of the perceptions of high school principals in disadvantaged high schools about the purpose of schooling and the approach to achieving effective educational outcomes

4.5.1 Background

As leaders of schools within their communities, principals are in a good position to provide insights into how schools can achieve their educational goals. Their leadership

requires them to guide the school in its pursuit of achieving the best educational outcomes for students, as well as negotiate a way through the issues that may impede that process. Investigating the perspective of principals was intended to provide an insight into the barriers to effective educational outcomes in disadvantaged high school communities and the impact of a whole-person approach. Qualitative semi-structured interviews were conducted with the four school principals.

4.5.2 Study aim

This study sought to understand what high school principals in a disadvantaged area of south-west Sydney consider the purpose of schooling in terms of outcomes for students, and what they see as the inhibitors and enhancers to that task.

4.5.3 Research questions

Principals were asked the following questions based on their perceptions:

1. What skills do you hope students of (your) high school will achieve when they graduate?
2. As a principal and educational leader, what are the inhibitors that you believe get in the way of your school achieving these outcomes for the students?
3. As a principal, what are the facilitators that you believe will assist your school in achieving these outcomes?
4. What role do you believe co-curricular activities play in student educational outcomes?
5. What do you believe is the role of the 'whole person' in enhancing students' learning?
6. Would you like the 'whole person' development of adolescents to be more or less a significant part of adolescent education? Why? Do you think that this is

an important part of students' education particular to this educational setting or do you think it applies to all settings?

4.5.4 Participants

A convenience sample of four principals from four disadvantaged high schools were invited to be part of the study, representing public high schools located in a cluster of disadvantaged schools in an outer south-western suburb of Sydney. The profile of the schools at the time of the data collection is represented in Table 4.4.

This research project was approved by the University of Newcastle Human Research Ethics Committee (Approval No. H-2011-0079) and the NSW DET SERAP (Approval No. 2011112).

Table 4.4: Profile of schools in the study

School	**School profile**					
Identifier	**Principal experience (yrs)**	**Students (*n*)**	**NESB**	**ATSI**	**ICSEA[a]**	**Quartile 1[b]**
100	10	519	60%	14%	875	75%
200	2	770	70%	3%	943	53%
300	4	630	80%	4%	935	57%
400	2	680	76%	4%	903	66%

[a] ICSEA = Index of Community Socio-Economic Advantage; average value = 1000; general range is 800–1200 (indicating low to high range of educational advantage)
[b] Quartile 1 = Percentage of school community in the lowest quartile of disadvantage (ICSEA)

4.5.5 Data collection

In-depth semi-structured interviews were considered the most appropriate method as it allows participants to speak candidly and unencumbered by social pressure about the complex issues being examined. Principal interviews were conducted by a retired principal, which allowed the interviewees a sense of comfort through the interviewer's familiarity with

the role (Boutain & Hitti, 2006). This process also enabled the interviewees to be distant to any sense that the researcher's views may be posed or implied, or the need to respond according to departmental expectations. This was an important consideration given that the interviewees were well known to the researcher. In addition, the nature of the responses sought required as best as possible an open view about their beliefs and as they related to their context. The retired principal was provided with specific training by this researcher regarding the style and nature of questions, and each interview was audio recorded. Each of the interviews lasted between 50 and 60 minutes. Signed permission was sought from each principal and a general statement was provided prior to the interview regarding the nature of the interview.

The approach taken with the interviews was to be 'faithful to the subject's thoughts and deeds', while developing a hypothesis about the interviewees' reasoning within the wider framework of the study (Pawson, 1995, pp. 33–34). This first group of questions related to principals' professional subjective judgement about educational purpose and outcomes, while the second group of questions was more specifically related to the role of the whole person. The final two questions required interviewees to reflect on the role of a whole-person approach to schooling in enhancing students' learning, and whether they considered the notion of the whole person to be a significant part of adolescent learning applicable to their own setting, or to all schools.

4.5.6 Data analysis

The interviews were digitally recorded with the participants' consent and transcribed verbatim. The interview transcripts were coded using NVivo qualitative data analysis software (QSR International Pty Ltd. Version 10, 2012). Analysis was performed using a hybrid inductive/deductive approach to qualitative data analysis, facilitating exploration of key concepts identified as part of the study framework, as well as data-driven concepts

arising from NVivo coding. Initially, a deductively derived coding template was formulated, grounded in the overarching study aims. An initial review of the data in relation to this pre-defined coding template confirmed an adequate fit of the data to the codes. During a subsequent detailed analysis of the data, further emerging inductive theme codes were identified, until a final hierarchical coding scheme was developed. This was applied to all four transcripts and the themes, patterns and relationships identified in the coded data.

As one of the principals participating in this study, I undertook the following steps to minimise potential bias. First, I engaged an experienced, retired principal to conduct the interviews. Second, I collaborated with a colleague in transcribing and developing the initial themes and overall to minimise possible narrow or biased interpretations of the data (McConnell-Henry, James, Chapman, & Francis, 2010; Meyers & Davidson, 2017). Third, I adopted a semi-structured approach to the interviews so that the principals felt free to cover the areas of their leadership role as they saw fit.

4.6 Summary of study methodologies

The studies adopted three methodological approaches to examine the ways educational outcomes could be improved in disadvantaged communities, underpinned by a theme of a connected whole-person approach to schooling: (1) quasi-experimental study design, including semi-structured interviews, (2) a quantitative cross-sectional study and (3) qualitative semi-structured in-depth interviews. The results of each of the three studies will be presented in the following chapters: Study 1 (Chapter 5), Study 2 (Chapter 6) and Study 3 (Chapter 7). The Discussion (Chapter 8) will include the findings, strengths, limitations, issues and implications of the current research, in addition to recommendations for current and future practice, support and research.

Chapter 5: Study 1

The feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school

5.1 Preface

This chapter presents the results of a mixed methods evaluation of a pilot study to determine the effectiveness and acceptability of adding a primary health nurse to the learning support team of a disadvantaged high school. A quasi-experimental study design was used. The study is based on the hypothesis that undiagnosed or poorly managed health issues of young people in disadvantaged communities add an additional barrier to the achievement of their educational outcomes.

Citation

Dennis Sarah, **Noon Ted**, Liaw Siaw Teng (2016). Is there a role for a primary health nurse in a learning support team in a disadvantaged high school? Evaluation of a pilot study. *Australian Journal of Primary Health 22*, 530–538.

5.2 Demographic characteristics

The government school in this study has a lower than average ICSEA score (875 = low range; the NSW state mean is 1000). The nurse assessed 19 children in 2012 identified in the lowest NAPLAN scores for their Year 7 cohort, for whom the mean age was 12.7 ($\pm$ 0.7), and 20 children from Years 7–9 in 2013 identified as students requiring health intervention without the prerequisite of low NAPLAN scores, for whom the mean age was 14.7 ($\pm$ 1.8). In both years of the program the majority of children assessed were male (74% and 70% respectively). The number of Aboriginal and Torres Strait Islander (ATSI) students in each of

the two groups was higher than the average for the school: *n* =5 (26.3%) in 2012 and *n* =7 (35%) in 2013, where total school ATSI enrolment was 14% and state ATSI enrolment rate was 5.8% (ABS, 2017c). An overview of demographic details is provided in Table 5.1.

Table 5.1: Student demographic characteristics

Characteristic	**2012 cohort (*n* = 19)**	**2013 cohort (*n* = 20)**
Number of male students, n (%)	14 (74%)	14 (70%)
Mean age, years (SD)	12.7 (0.7)	14.7 (1.8)
Number of Grade 7, n (%)	19 (100%)	5 (25%)
Australian, n (%)	12 (63%)	11 (55%)
Aboriginal Australian, n (%)	5 (26.3%)	7 (35%)
Other, n (%)	2 (10.5%)	2 (10%)

The results for service contact provided and care organised by the nurse for students can be found in Table 5.2.

Table 5.2: Services and care organised per student by the nurse following assessment

Nursing activities	**2012 cohort (SD) (*n*=19)**	**2013 cohort (SD) (*n* = 20)**
Telephone calls	5.1 (6)	4.3 (4)
Letters	2.2 (1.2)	1.1 (1.9)
Service coordination	2.7 (1.8)	1.9 (2.7)
Direct clinical	1 (0.3)	0.5 (0.9)

Nine (23%) students left the school during the study, six of whom moved out of the area. These students and families generally had more complex social, health and learning issues.

5.3 Health-based results

The results for health problems are provided in Table 5.3. Students assessed in 2012 had significantly more health problems than those assessed in 2013 (mean = 3.4, *SD* = 1.5 and mean = 1.7, *SD* = 0.9, respectively). The case mix varied from 2012 to 2013, with 58%

of students found to have dental neglect in the first cohort, while a significant number were referred for vision issues (53%) in the second cohort. In 2013, students were referred based on possible specific health problems, such as mental health issues. Additionally, numerous issues detected in the low-NAPLAN cohort (Year 7) were not identified in the 2013 cohort (Years 7–9) (e.g., dental, ADHD, neglect).

Table 5.3: Health-based results

Characteristic	**2012 cohort (*n* = 19)**	**2013 cohort (*n* = 20)***
Mean number of problems per student, n (SD)	3.4 (1.5)	1.7 (0.9)**
Range	1–7	1–4
Dental neglect/treatment, n (%)	11 (58%)	0
Vision problems, n (%)	10 (53%)	3 (15%)
Health education for parents, n (%)	8 (42%)	0
Behavioural issues, n (%)	4 (21%)	3 (15%)
ADHD/Asperger's, n (%)	4 (21%)	0
Mental health, n (%)	4 (21%)	6 (30%)
Poor school attendance, n (%)	2 (11%)	3 (15%)
Neglect, n (%)	2 (11%)	0
Diet/weight related, n (%)	4 (21%)	1 (5%)
Unstable home life, n (%)	2 (10.5%)	1 (5%)
Hearing problems	0	2 (10%)
Suicide	0	2 (10%)
Other (including hygiene, smoking, epilepsy, breathing and sleep difficulties, headaches, injuries etc.), n (%)	12 (63%)	11 (55%)

*Data for two students in 2013 were confidential and could not be given to the evaluators

**Difference significant $p < 0.001$

5.4 NAPLAN results

The results for NAPLAN scores can be found in Table 5.4.

Table 5.4: Change in NAPLAN scores following nurse intervention between Years 7 and 9

NAPLAN Subscale	Year 7 band, mean (*SD*), (*n* = 16/19)**	Year 9 band, mean (*SD*), (*n* = 12/20)**	Increase ≥1 band between Years 7 & 9, *n* (%)	Increase ≥2 band between Years 7 & 9, *n* (%)
Reading [a,b]	4.8 (0.9)	5.9 (0.8)	10/12 (83%)	5/12 (41.6%)
Writing	4.9 (1.0)	5.4 (0.7)	5/11 (46%)	0
Spelling	5.3 (1.2)	6.2 (1.4)	7/11 (64%)	2/11 (18%)
Grammar	5.1 (0.9)	5.7 (0.7)	7/11 (64%)	2/11 (18%)
Numeracy [a]	5 (0.5)	6.2 (0.7)	11/13 (85%)	6/13 (46%)

** This figure was reliant on availability of NAPLAN results for students.
[a] *n* = 14 for Year 9.
[b] *n* = 15 for Year 7.

NAPLAN results were only available for Years 7 and 9 for 16 students (Year 7) and 12 students (Year 9), respectively. The minimum national standard for literacy and numeracy for Year 7 students is band 5 and band 6 for Year 9 students (ACARA, 2017). Expected growth between Year 7 and Year 9 is one and a half bands. Overall, the growth in NAPLAN results in this study was positive. The mean NAPLAN score showed the expected growth in numeracy and reading, and for 46% (5/11) and 42% (5/12) of students, it was beyond expected growth. The pilot study demonstrated promising improvements in educational outcomes.

5.5 Interview results

Interviews were undertaken with four parents/guardians and five members of the high school staff (nurse, counsellor, two teachers and a member of senior executive). All participants interviewed (parents and staff) were female. The results are presented according to the construct of candidacy, Table 5.5 (Dixon-Wood et al., 2006).

Table 5.5: Summary of the domains for candidacy theory used in this study.

Domain	Description
Identification of candidacy	How people recognise that they have something that requires medical attention. Subthemes include normalisation of symptoms, health crisis and lack or preventive health use.
Navigation	The difficulties people face using services. They might not be aware that services exist, or they experience difficulties trying to negotiate their way into the service.
Permeability of services	How easy is it for people to use the services? Services can vary from being impermeable to very porous. Cost can render a service impermeable to vulnerable people as can low levels of health literacy.
Appearance at health services	How people make a case for why they require medical attention.
Adjudications	The judgements by health professionals. Vulnerable people may be judged as being less eligible for some interventions or they may be dismissed by the health professional.
Operating conditions	The local responses and resources to address the issue of candidacy in the local population.

5.5.1 Identification of candidacy

For many of the families the recognition that there was a health or behavioural problem that required a solution was their first barrier to accessing health care. Some were aware their child had problems but did not know how to address them. Some parents were dealing with their own problems, which interfered with their ability to effectively manage the health of their children:

> *[S]he was stressed and had her own mental health issues too and she was trying to deal with all of that and she just couldn't do [it] on her own. (Nurse)*

The phone call from the nurse was the catalyst they needed—along with her support—to start to address the problems identified:

Yes, it was a relief that a phone call came from the school and they couldn't believe that there was a nurse involved with the school that could help them with these health issues (Teacher 1).

Some of the family home situations were complex and this meant the parents/guardians were not always aware of the problems affecting their child:

She was living with her mother in primary school years and then she moved in with us just after she went to high school, so I wasn't aware of anything; neither was her dad (Guardian 2).

Other families were unaware their child required reading glasses until it was identified by the nurse:

[It] turned out we needed to get his glasses and that was good but he had the colour vision difficulty as well so that was addressed (Parent 1).

This realisation could be regarded as empowering. For instance, the same parent who was made aware of their son's visual problems, was prompted to have their other children examined as well:

I got all the kids assessed and that sort of stuff and the other one needed glasses as well so. I have got the other one in the reading group as well and they are doing a one-on-one reading with her and they are improving as well. It is a really great service and it would be excellent if it just stayed there. (Parent 1)

The nurse described that part of her role was to support families to recognise and acknowledge there was a health problem and that they had a legitimate need to access healthcare. For some issues such as eyesight, it was as simple as explaining the difference between being long- or short-sighted:

The parents could understand that eyesight could be an issue, but they needed education from me to explain that to them. That even though they could see distance they were not able to read and do their computer work. (Nurse)

The teachers described how powerful it was for both the children and their families to understand that a health problem could affect their learning, and it helped to explain their child's poor academic performance. The children were able to develop a better understanding of how the health issue could be addressed, which in turn improved their confidence. As a result, they were more likely to engage in learning in the classroom, as a teacher describes:

[Some of the students would think] I can't read so I am going to be naughty so that you will not make me do something that I can't do, and I will mask it. [But once the problem was addressed, their attitude changed to] I am not getting into trouble because I am actually trying now and I'm not as embarrassed now about [certain] things. (Teacher 3)

Identification of candidacy in the context of behavioural problems was particularly challenging for both parents and teachers. For parents, where there might have been a familial component to the problem, the behaviour was so normalised they assumed it was just the way their children were and did not think to seek help:

We assume that as a parent you would identify that [the problem] in your own child and that is a really naive middle-class attitude to take. They don't, and if the child has odd and unusual behaviours they just put it down to the child being odd and unusual. They go to school and all of a sudden, those odd and unusual behaviours present a certain way in the classroom and we start going, 'Is there autism in this child?'…. And they're going… 'That's just them' and 'All my kids are like that.' (Teacher 3)

The teachers would see the child behaving badly in class but did not understand some of the underlying reasons. After working with the nurse, they learnt to look differently at the child's behaviour:

> *'[W]hat this project has allowed us to do is to become more decisive and more critical in our observations. Just because a child is presenting with a certain suite of behaviours, [we question]…'What may be some of the underlying factors?' and 'Is there a health issue? Is there an emotional social issue? Is there a mental health issue?' And 'How do we dig in and around that?' (Teacher 3)*

5.5.2 Navigation

Many of the problems families were experiencing were related to their inability to navigate a complex health care system. This included not knowing that a service existed, or not being able to negotiate a way into the service:

> *A big problem has been navigation of the whole health system that we have seen. Our families don't know how to go about it. They make some initial enquiries; if that doesn't get anywhere, then they sort of drop it and leave it at that. (Teacher 1)*

As illustrated in the following examples, families were unaware that services such as public dental care existed. However, once their children were referred to and had attended such services, families were able to make appointments themselves for their other children:

> *All the children are in the system now, so they will be notified about regular check-ups if something does happen preventative care will kick in. The good thing about that too, I was able to let parents know about this program for themselves and for the other children in their families that they could [also] book in too. (Nurse)*

Previously if a medical problem was identified at school the teacher would contact the family and suggest a plan of action. It would then be the parent's responsibility to make an appointment; however, this did not always happen:

> *Often the parents will say that they're going to do it and you assume that they have, and you don't follow up and time gets away and problems often become a bigger problem medically and also behaviourally, and the worst thing is valuable learning time is lost (Teacher 2).*

If the family did manage to navigate the health system, they still ran into difficulties. One parent had assumed her child was registered for impending treatment because they had been to one assessment for a severe problem requiring orthodontic intervention. Over the subsequent period, they did not receive any follow-up phone calls despite many attempts on their part to contact the service:

> *I was ringing up and ringing up, but the nurse actually got through to them because they lost his files and she got a better response than what I could get, you know (Parent 3).*

However, the nurse was able to follow this up and through many hours of intense persistence was able to help resolve the issue:

> *After many phone calls being left on hold and hearing what they were saying about me…they said, 'No, we can't help you; he is still on the waiting list.' So, then I rang the patient complaints department at the hospital and they looked into it. No, he was never on the waiting list for orthodontic treatment. His paperwork was lost between the two departments. If I hadn't intervened the mother would have kept getting the same answer. (Nurse)*

The child and his family in this case trusted that the 'system' was working for them and had been waiting over 18 months for the response. Each night, the young boy—who is

also autistic—would have his meal broken into pieces by his mother to prevent bleeding of his gums due to badly protruding, mis-aligned teeth. Following the nurse's intervention, his teeth were operated on within six months, his protruding teeth were eventually straightened and his self-esteem renewed.

These problems were exacerbated by parents' reliance on prepaid mobile phones, as being on hold for prolonged periods was too expensive for them. More generally, mobile phone numbers frequently changed for many families; therefore, it was often difficult for both the health services and the school to contact families to remind them of any upcoming appointments. If the families did miss an appointment, they were labelled as noncompliant and would need to be re-referred into the system and the problems would start all over again.

5.5.3 Permeability of the services

Related to navigation, permeability refers to the extent to which the health services are accessible to people and can range from being permeable to be being very porous. Many services had complex referral processes and costs, which the families could not afford. Health services also require users to have reasonable levels of health literacy to access the system, to describe the problem and to understand the information they were being given. The parents in this study struggled to get through the hoops of the referral system and were appreciative that the nurse was able to help them make the appointments:

> *She was able to get him there. She just rang them up and she was able to get further on (...) I couldn't get past the nurses (Parent 3).*

The families valued the fact that the school health program was accessible and they were able to easily contact the nurse when they needed help or advice:

> *Yes, she gave me her contact details and everything, so any issues or anything I could just call her or anything like that (Parent 3).*

Parents have been amazed how [the nurse] has been able to fast track things. They say, like, 'How did you do that?' They sort of told me that I had to wait for 3 months. (Teacher 1)

Costs of health care contributed to the impermeability of the health services. Orthopaedic, as well as ear, nose and throat (ENT) services were particularly impermeable to the families because of the lack of bulk billing in the area. Much of the nurse's time was spent finding ways to access healthcare without additional cost to the parents:

[H]e has hearing issues that I have to find somewhere for him to go to apart from the current system. I can't find anything at the moment, [that]is not going to cost him a lot of money, and [where] they can [be] bulk-bill [ed]. That is a bit of a barrier. (Nurse)

Another child had a potentially serious orthopaedic condition that needed further urgent investigations:

He was referred to an orthopaedic surgeon with a referral letter requesting bulk billing and I actually called the surgeon too, requesting bulk billing and he still refused to bulk bill, so then my role was to find somewhere for this child's needs to be looked at. (Nurse)

The nurse finally managed to get the child seen at another hospital where they were bulk-billed. The family needed support from the nurse to get to the appointment and were guided through a 'dummy-run' in preparation for the actual appointment, which was during the school holidays.

Then we had to really educate the child and his family on how to get to [hospital] because they've never been to the city and the appointment was during the school holidays when I was away. So, we printed out all the maps, brought them in and

showed them where to go and how to get there. So, they did a trial run on the weekend. Exactly to the clinic where they had to go and found it. I called them back and asked them how they went and if they got there on time and did they find it. (Nurse)

While the level of permeability was preclusive to many of the families, more generally for other adults this was also at times noticeable, as was the case, for example, with the teaching staff:

And you see a list of psychologists or mental health professionals and you don't know who to pick (Teacher 1).

5.5.4 Appearance at the health service

Once at the health service, families are required to be able to articulate the problem; however, vulnerable people often feel intimidated by the power differential in the relationship or simply may not have the requisite vocabulary, especially when describing behavioural problems:

They couldn't articulate what the problem was, and I don't think the GP understood how severe the problem was (Nurse).

As a result, many families often asked the nurse to go with them to their first appointment. If she was not able to attend she would send the family with a letter detailing the problem:

Whenever the child was going with a parent to see a GP I always did a support letter to the GP on exactly what was going on in school because that was difficult for the parents to explain to the GP (Nurse).

The parents valued this support and felt that they were able to get much better outcomes:

If he has problems, they make sure his hearing is right, makes sure his eyesight is right. She came with me to the eye test when I was taking him there and got him different glasses. (Parent 2)

5.5.5 Adjudications

In this study, the decisions made by the health professionals were often influenced by the family's disadvantage. For instance, the health professional would at times decide they were unable to help because they did not understand what the parents were saying. In other situations, when the family missed an appointment, health professionals would assume that treatment was no longer needed and the child was taken off the list:

> *Another example of how he couldn't get back into the system … but it was thrown back that he didn't come back for his appointment with the ENT; well, he didn't, but that was out of the child's control because the mother didn't take him back. (Nurse)*

Parents were dismissed because they were unable to explain the problem or the severity clearly:

> *[T]heir literacy skills are really poor; they are frightened of doing something, their communication skills are really poor, and they don't know how to talk in the language [of the professionals], or deal with these people. So often you found that the staff have sort of been dismissive of them. (Teacher 2)*

5.5.6 Operating conditions

The nurse reported that it was easier to manage care for the Aboriginal children because of the availability of a local Aboriginal health service. Many of the Aboriginal families were already using this service and, if they were not, she could refer the children there and the service would organise the required care:

> *So, I went to [the Aboriginal health service] and said that we are concerned about this child; [and that] he is on your books. And we put in a job report together and then more notice was taken of the report. So, they [were] assessed by Family and Support Services and [an] intense family support officer was appointed to the family.*

So, her role was to get the family organised and get the kids organised and teach the family how to wash clothes, cook meals and all that. (Nurse)

And that is even if they have complex medical problems because you know [that] once they get to [the Aboriginal health service] there are Aboriginal health workers and people who can advocate there on their behalf. (Nurse)

The integrated coordination process in the Aboriginal health services are of a very good standard. The nurse experienced more difficulties organising care for the non-Aboriginal families:

The dream would be that once these children are identified as having issues there is some public health unit that we can liaise and refer these children straight into. The dream would be once we start these programs throughout the schools we do have some sort of relationship with the health service. (Nurse)

5.5.7 Acceptance by the school community

The nurse was accepted and welcomed by the families and the staff at the school. She acted as an advocate for families struggling with complex problems and a complex health system, which the families valued:

Like she will ring up every time to check how he's going, the admissions at the dental hospital, any problems with the dental hospital. (Parent 3)

The staff also valued this advocacy:

The fact that [the nurse] is here, she is keeping in contact with, 'Have you done this?' 'Did you attend the appointment?' And, 'What was the outcome of that?' and so on and so forth. It is getting better. (Staff 1)

The teachers were appreciative of the manner in which the nurse dealt with the families and was able to discuss sensitive topics with them in a way that the teachers felt they could not:

I don't think that there has been a negative reaction from any of the parents. Everyone wants to be heard to tell their story and because it's been done in such a private and confidential manner, they find that very empowering as well. (Staff 4)

5.5.8 Impact on the students

The impact of the nurse on students has also been positive:

I got her to come to the school and we said that this is what he needed for school. [I] showed her what school uniforms he needed. He didn't have any books or pens or pencils, so we supplied all that, got him a school bag got him a school uniform. She took him for haircuts and he really, really improved … [He was]a different child. Before, he would walk into the classroom with his head down, not looking at anyone. But now he has a good modern haircut, he looks you in the face and says, 'Hello miss.' He has clean clothes and has friends now, and he is entirely a different child. (Nurse)

The teachers describe the changes they observed in other children who were also part of the program:

So once problems were addressed and … the child sort of got that full night's sleep and then they referred [the child] to the breakfast club that they have here at school and introduced [the child] to other people at school, so they felt comfortable going and things like that. It sort of addressed some of the issues that the child was having, so then their engagement in the classroom was a lot more focused and so on. (Teacher 1)

The families also noted changes in their children since being part of the program and that they were more confident in taking part in other activities they would not have done before:

> *Yeah, that was a huge fix. She was below average in Year 7 and now she is going really, really well. The whole thing has just changed her around. (Parent 2)*

> *He got into the student leadership council in Year 8 (Parent 3).*

5.5.9 Impact on staff and school

The teachers valued the nurse as part of the student support service team because she provided an explanation for some of the children's behaviours in their classroom. They described taking a more holistic approach towards the child's learning since working with the nurse:

> *Well, through [the nurse's] health interventions we got a comprehensive picture of the whole child, so I think that is the most important thing for us because we get to see how some of these health issues were impacting their learning (Teacher 1).*

5.6 Summary

The pilot study identified a range of health issues for a group of students who were well below academic standard. The study also highlighted the challenges faced by parents in their ability to identify and overcome their children's health concerns. There is also a current lack of early identification of these related health and learning combinations at a level that could be attended to as part of ongoing support as children move through their schooling. In areas of community disadvantage these undiagnosed and poorly managed health and learning issues then become embedded as intergenerational problems. The burden on young people,

their families, school communities and ultimately society is significant and includes allocation of resources that are applied as reactive rather than proactive.

The role of the health nurse intervention should be multidimensional and include the initial identification of health issues, the critical steps of advocacy for young people and families, the follow-up to health services and finally supporting student learning and behaviour. Commonly, this comprehensive service provided by the health nurse is not the role commonly utilised in schools. Historically the role has involved more generalised support such as basic screening, some advocacy and perhaps contributing to enhanced health information in school communities. A health promotion role may be useful where that support supplements current work in schools (for example, physical education, personal development and health programs; see for example Sendall, Fleming, and Lidstone, 2011). However, the prime function of the school nurse in this project was to mediate and elicit health support through to completion for disenfranchised young people across the school community (for example, feeder primary schools so that families are tracked).

The work of the health nurse includes a high degree of proactive support for families who otherwise do not have the capacity and resources to identify health concerns that may influence their child's learning and well-being. The health nurse can help families penetrate the complexity of the health system in order to seek the layers of assistance required. The health nurse working in this way, becomes an important part of school learning teams identifying possible related medical concerns to be followed up and supporting families throughout the process together with targeted learning assistance. Thereby, the health nurse becomes a joint collaborator in the areas of health and learning.

The findings from this study will be provided in the Discussion (see Chapter 8).

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Chapter 6: Study 2

Cross-sectional study of the physical, social, and emotional wellbeing factors associated with academic performance in a sample of students from disadvantaged high schools

6.1 Preface

This chapter presents the results of a cross-sectional study designed to examine the associations between physical, social and emotional wellbeing and academic achievement through NAPLAN.

6.2 Demographic characteristics

Participants' demographics are reported in Table 6.1. In total, 378 students were assessed. The mean age of the sample was 12.5 ($\pm$ 0.4) years and was similar across the four schools as all students were recruited from Year 7. A larger percentage of participants identified as being male (59%). The percentage of ATSI students varied between schools with two schools (Schools 1 and 4) displaying a significantly greater proportion than the other two schools (p = 0.002). Both schools were above 10% ATSI students, a rate higher than the NSW state average enrolment rate of 5.8% (ABS, 2017c). The majority of students were born in Australia (85.8%); however, the percentage of students born overseas varied significantly (p =0.004) across schools, with School 1 having the smallest proportion (5.4%) and School 4 having almost a quarter of students who were born overseas (24.6%). More than half of all students had an overseas cultural background. Schools 2 and 3 had a significantly greater proportion (p = 0.006) of students with an overseas cultural background, at over 70%. About half of all students spoke a language other than English at home (55.5%) and the proportions were similar across all four schools (p =0.112).

Table 6.1: Demographic characteristics by school

Characteristic	**Class or mean (*SD*)**	**School 1 (*n* = 93)**	**School 2 (*n* = 105)**	**School 3 (*n* = 113)**	**School 4 (*n* = 67)**	**Total (*N* = 378)**	***p*-value**[a]
Gender, *n* (%)	Male	57 (61.3%)	60 (57.1%)	61 (55.5%)	41 (64.1%)	219 (58.9%)	0.667
	Female	36 (38.7%)	45 (42.9%)	49 (44.5%)	23 (35.9%)	153 (41.1%)	
ATSI, *n* (%)	No	81 (87.1%)	95 (99.0%)	100 (96.2%)	54 (90.0%)	330 (93.5%)	0.002
	Yes	12 (12.9%)	1 (1.0%)	4 (3.8%)	6 (10.0%)	23 (6.5%)	
Country of birth, *n* (%)	Australia	88 (94.6%)	84 (87.5%)	85 (82.5%)	46 (75.4%)	303 (85.8%)	0.004
	Overseas	5 (5.4%)	12 (12.5%)	18 (17.5%)	15 (24.6%)	50 (14.2%)	
Cultural background, *n* (%)	Australia	45 (48.4%)	26 (27.1%)	29 (28.2%)	24 (39.3%)	124 (35.1%)	0.006
	Overseas	48 (51.6%)	70 (72.9%)	74 (71.8%)	37 (60.7%)	229 (64.9%)	
Language at home, *n* (%)	English	51 (54.8%)	42 (43.8%)	40 (38.8%)	24 (39.3%)	157 (44.5%)	0.112
	LBOTE	42 (45.2%)	54 (56.3%)	63 (61.2%)	37 (60.7%)	196 (55.5%)	
Age (years)	Mean (SD)	12.49 (0.35)	12.48 (0.37)	12.48 (0.32)	12.45 (0.35)	12.48 (0.35)	0.943

ATSI = Aboriginal and Torres Strait Islander
LBOTE = language background other than English
[a] Fisher exact
[b] *p* value derived from one-way ANOVA.

6.3 Whole-person elements: physical, social and emotional

The results for whole-person elements can be found in Table 6.2. There was some variability displayed between school cohorts; however, there were no statistically significant differences identified between schools for any of the whole-person variables.

Table 6.2: Whole-person elements by school

	School 1 Mean (SD, n)	School 2 Mean (SD, n)	School 3 Mean (SD, n)	School 4 Mean (SD, n)	Total Mean (SD, n)	Min	Max	F	*p*-value
Fitness									
Shuttle laps	37.4 (21.2, 72)	32.48 (23.06, 79)	30.57 (14.36, 79)	33.5 (23.22, 34)	33.38 (20.37, 264)	3.00	111.00	1.498	0.216
QSL									
General satisfaction	2.97 (0.64, 80)	2.93 (0.66, 88)	2.87 (0.73, 100)	3.1 (0.71, 46)	2.95 (0.69, 314)	1.00	4.00		
Alienation	2.01 (0.68, 80)	1.66 (0.54, 88)	1.76 (0.59, 100)	1.71 (0.55, 46)	1.79 (0.61, 314)	1.00	4.00		
Teacher relationship	3.16 (0.54, 80)	3.05 (0.63, 88)	2.98 (0.75, 100)	3.13 (0.54, 46)	3.07 (0.64, 314)	1.00	4.00		
Self-esteem/status	2.81 (0.65, 80)	2.85 (0.6, 88)	2.73 (0.62, 100)	2.89 (0.68, 46)	2.81 (0.63, 314)	1.00	4.00		
Identity	3.03 (0.69, 80)	3.19 (0.66, 88)	3.07 (0.54, 100)	3.21 (0.55, 46)	3.11 (0.62, 314)	1.00	4.00		
Relevance	3.35 (0.52, 80)	3.31 (0.51, 88)	3.18 (0.67, 100)	3.37 (0.56, 46)	3.29 (0.58, 314)	1.00	4.00		
Achievement	3.27 (0.48, 80)	3.2 (0.57, 88)	3.08 (0.64, 100)	3.2 (0.64, 46)	3.18 (0.58, 314)	1.00	4.00		
QSL Total	2.97 (0.41, 80)	2.89 (0.39, 88)	2.81 (0.44, 100)	2.88 (0.61, 47)	2.88 (0.45, 315)	1.30	3.78	1.858	0.137

Table 6.2 (continued): Whole-person elements by school

	School 1 Mean (SD, n)	School 2 Mean (SD, n)	School 3 Mean (SD, n)	School 4 Mean (SD, n)	Total Mean (SD, n)	Min	Max	F	*p*-value
Co-curricular involvement (CC)									
Enjoy most subjects	1.84 (0.86, 80)	1.93 (0.77, 88)	2.13 (0.86, 100)	1.91 (0.89, 46)	1.97 (0.85, 314)	1.00	4.00		
Opportunity: involvement	1.86 (0.9, 80)	1.83 (0.83, 88)	1.74 (0.76, 100)	1.63 (0.64, 46)	1.78 (0.8, 314)	1.00	4.00		
Always involved	2.11 (0.94, 80)	2.18 (0.88, 88)	2.32 (0.93, 100)	2.22 (0.84, 46)	2.21 (0.91, 314)	1.00	4.00		
Enjoy involvement	1.84 (0.92, 80)	1.9 (0.83, 88)	2.05 (0.94, 100)	1.76 (0.85, 46)	1.91 (0.89, 314)	1.00	4.00		
CC Total	7.65 (2.68, 80)	7.84 (2.51, 88)	8.24 (2.68, 100)	7.52 (2.53, 47)	7.87 (2.61, 314)	4.00	16.00	1.409	0.240
A-SUEIT									
Emotion recognition	30.63 (4.46, 80)	31.31 (5.63, 88)	30.17 (4.36, 103)	30.31 (5.17, 48)	30.62 (4.89, 319)	8.00	49.00		
Understand others	63.44 (9.34, 80)	63.66 (10.59, 88)	63.72 (9.24, 103)	62.83 (10.23, 48)	63.5 (9.76, 319)	19.00	97.00		
Emotion direct cognition	30.54 (3.73, 80)	29.38 (5.15, 88)	29.73 (7.33, 103)	29.6 (4.55, 48)	29.82 (5.59, 319)	6.00	84.00		
Emotion mgt control	55.21 (9.23, 80)	55.93 (14.6, 88)	53.69 (8.47, 103)	55.63 (8.42, 48)	54.98 (10.67, 319)	22.00	153.00		
A-SUEIT Total	179.81 (20.17, 80)	180.27 (26.37, 88)	177.31 (19.35, 103)	178.38 (17.7, 48)	178.92 (21.43, 319)	55.00	298.00	.365	0.778

6.4 NAPLAN reading and numeracy scores by school

The results for NAPLAN scores are reported in Table 6.3. For each school, the mean NAPLAN reading and numeracy scores (M = 490, SD = 63) were considerably lower than the NSW state average (M = 546, SD = 70) (ACARA, 2012). The top of the box in the boxplots in Figure 6.1 represents the third quartile and, in most cases, the boxes are entirely below the line for the state average. The majority (~75%) of students at all four schools had NAPLAN reading and numeracy scores lower than the NSW state average.

The distribution of NAPLAN scores was symmetric with only slight skew. The schools' scores had less variance than the state distribution. There were a small number of high-achieving outliers apparent. Approximately 90% of students had complete NAPLAN scores.

Table 6.3: NAPLAN scores by school (2012)

NAPLAN tests	**School 1 (n = 93)**	**School 2 (n = 105)**	**School 3 (n = 113)**	**School 4 (n = 67)**	**Total (N = 378)**	**NSW average**
Reading, mean (*SD*, *n*)	476.77 (56.96, 84)	502.26 (54.01, 100)	503.56 (69.35, 101)	470.48 (68.67, 60)	490.90 (63.53, 345)	546.1 (70.4)
Numeracy, mean (*SD*, *n*)	481.40 (57.18, 83)	498.50 (56.90, 96)	515.32 (67.35, 99)	471.39 (77.24, 59)	494.48 (65.84, 337)	543.4 (80.4)

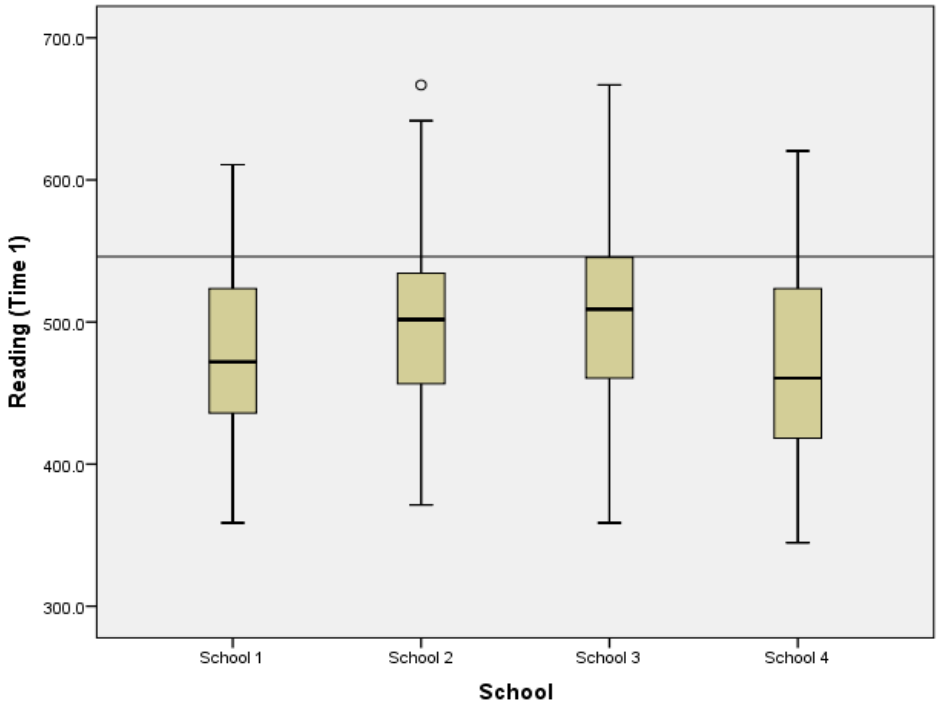

Figure 6.1: NAPLAN reading by school (2012)

6.5 NAPLAN reading and numeracy descriptive associations

The results for the demographic breakdown of NAPLAN scores for the sample can be found in Table 6.4. Females and males achieved similar reading scores (female, mean = 492.6, *SD* = 63; male, mean = 491.6, *SD* = 59), whereas females displayed considerably lower numeracy scores than males (male, mean = 502.8, *SD* = 68; female, mean = 482.5, *SD* = 61). ATSI students achieved lower scores on average in comparison to non-ATSI students for both reading (ATSI, mean = 469, *SD* = 58; non-ATSI, mean = 493, *SD* = 61) and numeracy (ATSI, mean = 457, *SD* = 42; non-ATSI mean = 497, *SD* = 66). Students with a language background other than English (LBOTE) were found to have lower reading scores than students from an English language background (LBOTE, mean = 488, *SD* = 59; English, mean = 496, *SD* = 63) and higher scores in numeracy (LBOTE, mean = 499, *SD* = 65; English, mean = 488, *SD* = 66). Those born in Australia were found to have higher reading scores (Australian, mean = 496, *SD* = 60; non-Australian, mean = 477, *SD* = 60) and

numeracy scores (Australian, mean = 496, *SD* = 66; non-Australian, mean = 486, *SD* = 65) than those who were not born in Australia.

Table 6.4: NAPLAN scores by selected demographic characteristics (2012)

	Sex		ATSI		Language		Country	
NAPLAN test	**Female**	**Male**	**Non-ATSI**	**ATSI**	**LBOTE**	**English**	**Other**	**Australia**
Reading mean (*SD*)	492.96 (62.70)	491.60 (59.25)	493.10 (61.07)	469.12 (57.83)	488.38 (59.19)	495.68 (63.45)	476.94 (59.84)	495.55 (60.47)
Numeracy mean (*SD*)	482.56 (61.09)	502.81 (68.07)	496.67 (65.77)	457.23 (42.40)	499.19 (64.62)	487.89 (65.75)	486.48 (65.22)	496.25 (65.96)

6.6 Bivariate associations between demographics and reading

To test for bivariate associations, each predictor variable was entered separately into multi-level (adjusting for school) regression models. Unstandardised regression coefficients are reported in the tables 6.5 to 6.8. The results for the demographic bivariate associations with NAPLAN reading can be found in Table 6.5. Country of birth was the only variable to display a significant association with NAPLAN reading, with students born in Australia displaying scores 20.3 points higher on average than those born outside Australia (SE = 6.36, $p = 0.001$).

Table 6.5: Bivariate associations between demographics and reading

	n	**Class**	**Estimate**	**SE**	***p*-value**
Age	344		0.02	9.56	0.999
Sex	341	Male	0.13	4.49	0.976
Language	322	English	8.18	6.29	0.193
Cultural background	344	Australia	4.63	8.37	0.580
Country of birth	344	Australia	20.30	6.36	**0.001**
ATSI	323	Yes	–16.09	12.49	0.198

6.7 Bivariate associations between demographics and numeracy

Bivariate associations between demographic variables and NAPLAN numeracy are reported in Table 6.6. Male students had NAPLAN numeracy scores 21.6 points (SE = 6.4, p = 0.001) higher on average than female students. Students' identifying as a cultural background (Australian) had scores 15.0 points (SE = 7.5, p = 0.047) lower on average than those identifying as being from other cultures. Students born in Australia displayed scores 10.7 (SE = 3.4, p = 0.002) points higher on average than those born outside Australia. Students from an ATSI background displayed scores 31.9 points (SE = 12.8, p = 0.013) lower on average than non-ATSI students.

Table 6.6: Bivariate associations between demographics and numeracy

	n	**Class**	**Estimate**	**SE**	***p*-value**
Age	337		0.01	13.29	0.988
Sex	334	Male	21.61	6.41	**0.001**
Language	318	English	–10.29	6.03	0.088
Cultural background	337	Australia	–15.04	7.58	**0.047**
Country of birth	337	Australia	10.74	3.42	**0.002**
ATSI	319	Yes	–31.95	12.83	**0.013**

6.8 Bivariate associations between whole-person elements and NAPLAN reading

Results for the whole-person bivariate associations with NAPLAN reading can be found in Table 6.7. A one-unit increase in SUEIT score displayed a 0.68-point increase in NAPLAN reading score (SE = 0.13, p = 0.000).

Table 6.7: Bivariate associations between whole-person elements and NAPLAN reading

	n	**Estimate**	**SE**	***p*-value**
Shuttle laps	251	–0.18	0.16	0.267
QSL Total	295	6.57	14.36	0.647
CC Total	295	1.02	5.84	0.862
SUEIT Total	299	0.68	0.13	**0.000**

6.9 Bivariate associations between whole-person elements and NAPLAN numeracy

The results for the whole-person bivariate associations with NAPLAN numerac*y* can be found in Table 6.8. A one-unit increase in SUEIT score displayed a 0.58-point increase in NAPLAN numeracy score (SE = 0.09, $p = 0.000$).

Table 6.8: Bivariate associations between whole-person elements and NAPLAN numeracy

	n	**Estimate**	**SE**	***p*-value**
Shuttle laps	248	0.26	0.19	0.177
QSL total	291	15.93	14.61	0.275
CC total	291	–0.43	8.84	0.961
SUEIT total	295	0.58	0.09	**0.000**

6.10 Multivariate demographic associations with NAPLAN reading and numeracy

Two models were proposed to investigate multivariate associations with reading and numeracy NAPLAN outcomes:

1. Multicultural model: sex, language and country of birth
2. Indigenous model: sex and ATSI status

6.10.1 Multicultural model of multivariable demographic associations with NAPLAN reading

The results for the multicultural model of multivariable demographic associations with NAPLAN reading can be found in Table 6.9. Country of birth was the only variable to retain significance in the multivariable model, indicating that those born in Australia had NAPLAN reading scored 26.76 points higher on average (SE = 5.38, $p = 0.000$).

During cross tabulation, cultural background and ATSI status displayed zero cell counts with the country of birth variable.

Table 6.9: Demographic multivariate associations with NAPLAN reading—multicultural model

		BIC: 3576.930			**BIC: 3571.240**		
	Class	**Est**	**SE**	***p*-value**	**Est.**	**SE**	***p*-value**
Sex	Male	–2.21	5.34	0.680			
Country of birth	Australia	27.09	6.07	**0.000**	26.76	5.38	**0.000**
Language	English	2.75	4.12	0.506	3.02	4.42	0.496

6.11 Indigenous model of multivariable demographic associations with NAPLAN reading

The results for the Indigenous model of multivariable demographic associations with NAPLAN reading can be found in Table 6.10. Neither sex nor ATSI status retained significance in the multivariable model.

Table 6.10: Demographic multivariate associations with NAPLAN reading—Indigenous model

	Class	**Est**	**SE**	***p*-value**
Sex	Male	–1.274	4.888	0.794
ATSI	Yes	–16.241	12.418	0.191

6.12 Multicultural model of multivariable demographic associations with NAPLAN numeracy

The results for the multicultural model of multivariable demographic associations with NAPLAN numeracy can be found in Table 6.11. Sex, country of birth and language spoken at home all displayed significant association with NAPLAN numeracy scores in the multivariable model. Sex displayed a stronger association with numeracy scores than country of birth and language variables, with a larger standardised estimate (SE = 0.14) than both country of birth (SE = -0.10) and language (SE = -0.10) variables.

Table 6.11: Demographic multivariate associations with NAPLAN numeracy—multicultural model

	Class	Est	SE	Std Est	*p*-value
Sex	Male	17.61	8.44	0.14	**0.037**
Country of birth	Australia	18.11	7.22	0.10	**0.012**
Language	English	–12.44	5.06	–0.10	**0.014**

6.13 Indigenous model of multivariable demographic associations with NAPLAN numeracy

The results for the Indigenous model of multivariable demographic associations with NAPLAN numeracy can be found in Table 6.12. Sex and ATSI both displayed significant associations with numeracy scores in the multivariable model (male est. = 18.83, SE = 7.9, $p = 0.017$; ATSI est.= -29.15, SE = 12.95, $p = 0.024$).

Table 6.12: Demographic multivariate associations with NAPLAN numeracy—Indigenous model

	Class	Est	SE	Std Est	*p*-value
Sex	Male	18.83	7.90	0.15	**0.017**
ATSI	Yes	–29.15	12.95	–0.11	**0.024**

6.14 Multivariate associations between whole-person variable and NAPLAN reading

Whole-person variables displaying significant (A-SUEIT) or near significant association (shuttle laps) were included in multivariate models predicting NAPLAN reading and numeracy outcome variables. The results for the whole-person associations with NAPLAN reading can be found in Table 6.13. EI was significantly associated with reading (Est.= 0.75, SE = 0.09, p = 0.000).

Table 6.13: Whole-person associations with NAPLAN reading

	Est	**SE**	***p*-value**
Shuttle laps	–0.21	0.13	0.091
SUEIT Total	0.75	0.09	**0.000**

6.15 Multivariate associations between whole-person variables and NAPLAN numeracy

The results for the whole-person associations with NAPLAN numeracy can be found in Table 6.14. EI was significantly associated with numeracy (Est.= 0.59, SE = 0.07, p = 0.000).

Table 6.14: Whole-person associations with NAPLAN numeracy

	Est	**SE**	***p*-value**
Shuttle laps	0.24	0.18	0.184
SUEIT Total	0.59	0.07	**0.000**

6.16 Summary

This study has highlighted considerable concerns regarding the learning gap for students entering Year 7 in four urban disadvantaged high schools. NAPLAN scores were between two- and three-years' growth behind their state peers, with girls' numeracy levels a further year behind. Similarly, for Indigenous students the gap relative to their equivalent peers was approximately one year behind. The cumulative issues of disadvantage within the urban environment add to a complex mix across the range of student cultural groups. Physical activity and health-related fitness levels for students scored in the low range – particularly so for boys and given growing evidence of a strong association between physical fitness, cognitive functioning and academic achievement, there is a good argument for the inclusion of targeted exercise interventions suitably adapted to school curriculum and timetable requirements.

The strong association between literacy, numeracy and emotional wellbeing provides sound arguments for ensuring students – particularly in disadvantaged communities – are provided with holistic support at a young age. In order to ensure this area of human development is addressed, it is important to acknowledge the complex mix of coping and self-regulatory mechanisms are supported through links to personal and environmental factors. Pro-social skills can be targeted in the '0-5'- Year age group, particularly for young people in areas of disadvantage where there are early signs of mental health indicators (See for example Guy, et al., 2016) and a capacity for early years' identification and uptake of health services in low SES communities (See Eapen, et al., 2017)

The implications regarding the findings from this study will be provided in the Discussion (see Chapter 8)

Chapter 7: Study 3

An analysis of the perceptions of principals in disadvantaged high schools about the purpose of schooling and the barriers and facilitators to effective educational outcomes

7.1 Preface

This chapter presents the results of an in-depth interview of principals from four disadvantaged high schools about their perceptions of the purpose of schooling, the enhancers and inhibitors to achieving successful educational outcomes and the role of the whole person in student learning.

7.2 Results

The interview results are presented according to the emerging themes as represented by the headings below and consist of various subthemes about principal views regarding student outcomes, including the barriers and the role of the whole person.

7.3 Desired student outcomes

For all four participating principals, the core skills of literacy and numeracy were considered secondary to more generic outcomes, which were acknowledged as being somewhat harder to assess and measure:

> *Literacy and numeracy are important, but I don't want it to be the straight jacket that crowds their [students] entire schooling experience because I believe that schooling is so much more (P-400).*

Skills required to be effective learners were acknowledged as important for graduating students, such as the ability to reflect, problem solve and think creatively, laterally and critically. One principal, in particular, felt that the importance of these generic skills was

grounded in the need to prepare students for an as yet unknown world, characterised by different modes of social interaction and communication, as well as unknown technology, unknown occupations and, therefore, unknown challenges.

Yet another principal emphasised the role of her school in preparing students for the world ahead while realising that school is 'just an early stepping-stone, part of the journey', and that achievements and success in the latter part of their lives may be somewhat independent of school success in the more traditional sense of the word. Indeed, a common thread was the wish to foster in students the ability to plan and anticipate their future rather than focusing on past experiences and constraints.

All principals, to various extents, acknowledged the need for schools in disadvantaged areas to play an instrumental role in equipping graduating students with skills (including life skills) and attitudes that would see them confident and competent to look beyond their current situation of disadvantage:

> *[T]he skills to know where else you can go ... the confidence, which is a skill, to go outside of [the local area]. For example, some of our kids ... can't even get to Sydney, can't even get into the city, which is not that far away, to look for other types of work or education, or uni or TAFE, or any of those things. So, that's what we hope here at [school] ... that, as well as all the education that we can give them. They need to be able to look beyond school and beyond their local environment and have the skills to do it, and have the knowledge of how to go about finding the work ... [W]e want them to leave and be able to manage their own money and pay their bills ... [O]ur students are not necessarily brought up in a home where their parents have been to university or [have had] further education and we all know that further education in some way shape and form will support the kids to have a higher income later on in life (P-200).*

However, beyond desired student outcomes relating to skills and capabilities, principals also talked of the need to instil in students a set of intrinsic values and attitudes that would set them up for healthy social interactions and a desire to contribute to society in meaningful ways. One principal emphasised a wish that students would leave her school with a healthy sense of tolerance and fairness, while yet another mentioned a desire to encourage a sense of involvement in the world around them. That is, principals felt a need not only to produce students with the skills required to make meaningful contributions, but also the attitudes that would provide the basis for good citizenship.

One principal was very vocal about the need to cultivate in students a sense of connectedness, which was discussed mainly in an ethnically connected context but also in relation to pride in the school culture.

Principals perceived the role of their school as one intricately involved in the personal development of their students. Specific emphasis was made by all on fostering social and emotional awareness and on skills needed for forming healthy social relationships (such as being polite and respectful), but also intrinsic values such as self-worth, optimism, resilience and a sense of self that centred around the idea of creating 'happy students' who graduate with fond memories of school and a love of learning:

> *I want to see kids graduating with a sense of happiness and optimism [and] a sense of self-worth; [that]they've enjoyed their school experience [and that] they feel that they have been successful in various areas (P-400).*

The importance of resilience was mentioned by some principals, discussed mainly in the context of social disadvantage; but the importance of facing, coping and dealing with challenges was discussed by all more generally.

7.4 Facilitators of student outcomes

7.4.1 Funding

All four principals identified school funding as a facilitator for achieving the desired student outcomes. For some, this enabled a more 'even playing field' (in terms of competition with selective and private schools), while another felt it could assist in providing much needed freedom to enable a more flexible delivery of their education programs.[8]

7.4.2 Teachers, parents and community

Not surprisingly, there was a dominant belief that teachers themselves play a salient role in facilitating the desired student outcomes. This included the sheer goodwill extended by staff in facilitating and accommodating a variety of whole-school projects, involvement in competitive sports and more. Two of the principals also directly mentioned the importance of a supportive parent community at the school:

> *We do have a P&C which is great, and it is growing slowly ... [and] we have staff go as well. Staff turn up, which is [a] whole commitment ... but then you know, you've got Polynesian [day] and all the parents have cooked the food and are providing the food. The kids are always [coming dressed] in [their] school uniform which has been a battle; but they support us in a silent participating way (P-200).*

However, in one principal's experience, the role the parent community can play in facilitating student outcomes was perceived as being jeopardised by a reluctance of some parents to engage with the school and accept a shared responsibility for their children's education. All principals in this study mentioned, in various contexts, the important role played by external bodies, including the links, engagements and partnerships with family,

[8] In Australia school funding has received considerable attention regarding fairness of distribution as it applies across a range of school systems, with a particular focus on students from low socio-economic and minority student groups (Gonski et al., 2011).

community and businesses. These connections were considered not only as a source of funding, role modelling and resource extension, but in certain ways as an avenue for ensuring the wide-ranging and holistic education of their students.

Two principals alluded to the importance of healthy staff dynamics and the resilience of staff in accepting and performing within the contextual restraints imposed by departmental guidelines, as well as those barriers grounded in social disadvantage. It was felt that important student outcomes could be achieved by such exceptional teachers, who not only were equipped with the required knowledge and skills but, more importantly, would assist students in developing the values and attitudes necessary for life after school, such as resilience, courtesy and happiness, as well as the ability to engage students through the use of positive language:

> *[I]t wouldn't be about just teaching them the subject matter; it would be teaching them, you know, the skills, the values, the attitudes, the relationships, modelling, resilience modelling, courtesy modelling you know a love of life, a love of learning, modelling happiness ... and really developing student-teacher relationships; for a teacher to really say [to a student] 'I have all the confidence in you. I believe you can do it ... I believe you can be anything that you want to be in life'. [That] does a lot for a student, that positivity, that language (P-300).*

7.4.3 Teaching and curriculum

One principal attached paramount importance to the focus on quality teaching and learning in achieving student outcomes. This comprised a large spectrum of skills, knowledge, behaviours and attitudes, and included teachers continually reflecting on their practice, developing their understanding, knowledge and teaching methods, individualising learning and enabling students to make links and drawing connections between learning in

different areas, as well as elucidating its global relevance—all of which are considered particularly salient aspects:

> *Connecting learning to the real world for kids is important; to their background knowledge, e.g.,[We have] a co-curricular program connection: an environmental team of students who have been trained to test light usage, water flow, water wastage ...it is clear their learning is connected. It includes mathematics, physics, working in teams, critical thinking, problem solving, those current and future skills. There is a connection to interest in their classes; [it supports] their enjoyment of maths, they see the relevance of it. So, if you link that back to classroom practice, the [NSW] Quality Teaching processes—the element of background knowledge brings real meaning to their classes. But for students who have a weakened background in terms of their exposure to the real world and [therefore are not] seeing that link, [you] create one for them, and that becomes yet another facilitator to their learning (P-100).*

Similar beliefs were indirectly discussed by another principal who perceived that greater flexibility within the curriculum and knowledge integration across curricula could help facilitate student outcomes. The notion that 'the high school bell rings—proceed to the next class' requires much more adaptive change to provide students with greater connected learning, matching concepts with subjects, is not new; however, there are practical drawbacks to an old design in a contemporary world.

A few principals alluded to a breaking down of the traditional preconceived notions of what teaching and learning looks like. Rather, broader and more student-centred methods were preferred, in which student leadership, student mentoring and peer teaching were used to provide improved meaning, relevance and ownership of learning. That principals could spend more time in this area was felt by all and, as the leading learners in the school, the

daunting and at times overwhelming inhibitors to enabling this process considered a difficult challenge.

7.4.4 Student focus

One of the stronger themes to emerge among the four principals was the view that a holistic and student-centred approach was vital in meeting the student outcomes they set out to achieve. For three of the principals, this comprised a view to provide 'holistic education' and care of students—ranging from nutrition, exercise, personal development and social welfare—where the school would extend its role to accept responsibilities traditionally understood as those of home and family. Indeed, one principal talked of her school being actively instrumental in dealing with health risk behaviours by addressing smoking in schools in a very direct and pragmatic way. The school was indeed considered a 'second home', while another had a clear vision of the benefits of linking health and education, thus providing schooling with a much wider focus and a more diverse and multi-faceted role and function than traditionally adopted.

One principal perceived a ubiquitous focus on the student as being of overarching importance. This was discussed in terms of the need to 'humanise learning', whereby students, by way of their active participation and partnering in their educational journey, would gain the skills, knowledge and attitudes required for their post-graduation life. Therefore, it was considered crucial that students were put at the centre of planning at all levels:

> *When you humanise what we do ... and I think that comes probably within this notion of the whole-child, you draw everyone in together—a process in which the other human elements beyond the academic bring teachers and students as learners together, and when that happens you're already beginning to say to the child that we're on this journey together ... when you do that, I think then you've already begun*

this process of creating a sense of the student as someone who's ready for this journey that there about to embark on (P-100).

7.4.5 Leadership

The direct influence of leadership in meeting student outcomes was mentioned by one principal. She referred to outcomes being closely linked to strong inspirational leadership assisted by a cohesive executive team based on shared goals and values:

The answer to facilitating [the desired student outcomes] is leadership. It's leadership with values, strong educational values; it's leadership that can vocalise and articulate that ... so I lead every staff development day, I start every session, I engage the staff in what I hope is an inspirational, aspirational educational purpose and getting ourselves back to our beliefs, so we've developed a shared platform for learning (P-400).

7.5 Barriers to desired outcomes

Across the four principal interviews, two main groups of barriers were perceived to hinder the achievement of desired student outcomes. First, one of the overarching obstacles faced by schools in working towards and achieving the student outcomes identified earlier, was the political and bureaucratic context in which schools are forced to operate.

Second, there was a clear underlying belief that socio-economic dynamics and characteristics intrinsic to the community played a salient role in influencing the students' ability to achieve certain outcomes.

7.5.1 Political and bureaucratic factors

All four principals agreed that those factors beyond the control of the individual school—the policies and paradigms within which public schools work—had a critical impact on not only the processes by which learning could occur, but the outcomes that could be

achieved. However, one principal who had a particularly strong view of the role of these political factors and had been involved at a national planning level, alluded to the possibility that schools and principals themselves could assume a more active role in lobbying for and becoming instrumental in shaping policies at a state and national level.

Policies and planning 'handed down' to schools were believed to impose a 'one size fits all' view of public education. This inability to tailor education to the students was also at the heart of other comments relating to the de-emphasis on creativity and the arts and an over-emphasis on literacy, numeracy and standardised testing:

> *[Standardised testing] is an obstacle; it is an impediment to driving the kind of school learning culture that I want to drive (P-400).*

It was believed that the compartmentalisation of subjects was also perpetuating old institutional paradigms and ways of thinking about learning that were not necessarily conducive to meeting student outcomes. One principal noted that the desired student outcomes, to a large extent, were constructed around a child-centred and whole-child view of education. Barriers highlighted by this participant reflected the constraints inherent in a system understood to hinder such a focus, mainly by neglecting to fully consider the principles underpinning the MD (MCEETYA, 2008) at the planning level:

> *We spend an awful amount of time focusing on things that are not directly impacting on what happens in the classroom (P-100).*

The resulting narrow view of education was felt to overlook the importance of considering the necessity to address basic needs in students, such as a range of health concerns to assist learning, like vision and hearing impairments, and mental health issues as a basis for meeting educational goals. There was, the participant noted, little point pushing the

educational agenda along while there was no connection to critically basic needs that may be missing for some students and their families.

The sheer number of policies and a crowded and ever-expanding curriculum, coupled with a predominant perception of inequity in funding, were understood to have wide-reaching effects on a school's ability to implement programs, compete with other schools in attracting students and provide the quality of education that was part of their vision.

7.5.2 Socio-economic and community factors

The influence of socio-economic factors hindering a school's capacity to achieve student outcomes was noted as broad and wide-ranging. It went beyond the immediate notion of disadvantage and taken as having roots in a long-standing, perpetual 'failure' of previous schooling systems, with negative experiences and school failures of adult community members and parents being passed on to younger generations. The low parental expectations for academic success thus contributed to a self-fulfilling prophecy, where a lack of confidence, self-efficacy and parental support posed a significant challenge and had a negative impact on overall school achievement, which in turn would lead to further low expectations. Indeed, one principal talked about the poor image of the school in the community as a particularly difficult aspect to change:

> *'This school sucks!' The kids would say that, [And] 'This school's a junkie school', [but] they don't mean that everybody's on drugs. What they mean is that it's a run-down, daggy, dirty low school, it doesn't achieve much, and I suppose if you were to look at our results [HSC], one band 6 last year in the school, one band 6 the previous year, you know, lots of band ones and twos...if you put that up on your 'My School' website of course the school doesn't look like it's doing very much (P-400).*

Other community factors were noted as significant in impeding student outcomes related to culture. Specifically, one principal from a school with a large multicultural student population mentioned the clash between white under-class and culturally diverse groups in the community having detrimental effects on the school's ability to perform efficiently. The school was, as a result, harder to staff with experienced teachers. Teachers were difficult to motivate because of the challenging environment they were facing in their classroom, which were characterised by behaviour problems and a lack of discipline and respect, which, in turn, negatively affected their ability to relate to and build rapport with the students.

Finally, a host of factors relating to lifestyle and family—and again perceived to have its root in socio-economic disadvantage—were highlighted by all but one principal, as being unconducive to learning. These included poor diet (high energy drinks, low nutrition breakfasts), sedentary behaviours, smoking and a lack of rest and sleep due to 24/7 exposure to technology. Interestingly, one principal pointed out that she did not perceive aspects of these family and lifestyle issues only rooted in low-SES school communities, as she had witnessed similar problems encountered by mortgage-stressed families who, due to high workloads, were unable to help meet their children's basic educational support needs (e.g., ensuring children's attendance at school).

7.5.3 Other factors

Principal comments regarding the important effect and influence of media factors were noted by some. This was viewed as partly contributing to a school's difficulty in meeting student outcomes as an expectation of the system's desires. This in turn was discussed mainly in the context of attracting a mix of students' representative of the local population, rather than being a last choice or the choice for families unable to afford sending their children to private schools; or the option of selective and semi-selective public schools

where the balance of potential student leaders was taken into these seemingly more attractive options:

> *Because of the choice thing that's kicked in and the fact that parents can't afford to send their kids to the local catholic or the Islamic school and they can't get them into a selective school, this becomes the place that they have to go to (P-400).*

These views were noted, in part, as an artefact of media factors. Such dynamics are also considered to reflect societal changes in consumer behaviour over recent decades. This is coupled with the increased availability of information, not just through the media—which includes such sources as the My School website and its reporting—but through word-of-mouth and an increasing trend over time of the availability of such schools, of which there are a particularly large number in the vicinity of the schools that participated in this study.

7.6 Indicators: achievement of desired student outcomes

The principals perceived the successful achievement of outcomes as being indicated by students possessing certain key characteristics and displaying certain behaviours. Mostly, this centred around core attitudes such as optimism, self-efficacy, resilience and excitement about learning, while behaviours such as reduced truancy, positive engagement with staff and other students, as well as involvement in out-of-school activities were positive indicators.

A second group of indicators marking the achievement of desired student outcomes focused on what was happening in the classrooms. One principal talked of the importance of seeing evidence of problem-based, cooperative learning challenges and the facilitation and provision of opportunities for self-refection in the students, which have potentially positive flow-on effects. This same principal also mentioned the presence of co-curricular activities in the school as indicators of achieved outcomes. Another principal emphasised that a salient

marker, in his view, was evidence of a strong overarching focus on teaching and learning as opposed to curriculum focus.

7.7 Importance of whole-person model

The principals' perception and level of importance of the whole-person model was grounded on the core understanding that educators have a fundamental obligation to consider all aspects of a student (academic, physical, social, emotional, spiritual, moral, etc) as well as ensuring all basic needs have been met as a minimum prerequisite for learning to take place. This was a belief shared by all four principals, albeit expressed in various ways with varying foci:

> *Children need to feel valued; they need to feel that there is passion; they need to feel that we want them here. But also, they need to feel ready for school; to have a full stomach; they need to be able to see properly (P-200).*

One principal talked about the importance of the whole person in breaking down the cycle of self-fulfilling prophecies perpetuating poor performance and failure to thrive. This cycle was considered to arise from students' contexts and previous experiences, leading to low expectations and fear of failure/success. This, in turn, led to poor performance, providing further fuel to their sense of failure. It was felt that working 'at the heart of the kids' was the answer to breaking this cycle. Not only did the principals consider the whole-person concept as being important for achievement in the more traditional sense, but also a more realistic and holistic approach was needed to deal with problems within the school, such as truancy/attendance issues.

The importance of the whole-person concept was similarly discussed by all principals as a key element to helping students discover their own potential, talents and passions, and thereby facilitating the development of well-adjusted citizens. This was again, not

surprisingly, quite salient in a disadvantaged student population in which many students were unlikely to receive sufficient support from family and community to help build resilience and coping strategies, or to provide a safe platform from which to develop their confidence:

> *There's no point in saying, 'Well, where would you like to go and how can you contribute to society?' when they're still feeling, 'well, I don't want to contribute to society, because at the moment I hate it' (P-300).*

It was noted by all principals that it was only through the school's attention to the whole person that children could be helped to develop as whole beings, which one particular principal perceived to entail an exposure to and fostering of appreciation for the world around them (outside the classroom), thereby catering for all elements of the child. This notion was seen, in part, as an attempt to compensate for what may be perceived as one of many deficits for students in disadvantage; for instance, domain knowledge (or the contribution of world experiences). The perception is that broadening the experiences of students—which also helps language and expression—requires teachers even more so in disadvantaged communities to bring the world to their students, with all the flamboyance and flair possible.

Most of the principals emphasised the significance of considering the happiness of the students as a cornerstone of the whole-person model. Optimal academic achievement and achieving to one's potential was considered to greatly depend on students 'feeling welcome at school' and feeling connected with their teachers. The principals were of the view that it was the responsibility of educators to not only facilitate learning, but also consider the importance of a sound basis or human context for learning to occur (e.g., adequate sleep, diet, safe family environment, etc.).

There was significant agreement among the principals on what constituted the whole-person model and the implication of not considering this construct. One principal expressed the resolve, vision and commitment required from school leaders in implementing and giving

due attention to this model in the face of reporting and output requirements, which are not yet geared towards assessing student growth on a whole person level:

> *I'm the leader of the school and much of what we do is about how we define the purpose of education. It is often about academic growth and data, numerical values. How much do I believe that to be fair? How much am I prepared to stand up and say, 'Yeah, they're growing and developing according to the data; but look what else they're doing?' We're developing citizens; they will make valuable contributions to society. Numerical data is unable to put a value on these other components .... we've still got to make sure we're doing that well, really well (P-200).*

One principal inferred the whole-person model was very much underpinned by a student-centred focus, without which the model becomes irrelevant. A student-centred focus entails a partnership with teachers where students become active and equal participants in their learning journey. This is generic to all learning contexts, but particularly so in disadvantaged communities where students were often disconnected, disrupted, or very detached from key people in their lives. The sense of ownership and desire about such a relationship has a direct link to school attendance and school purpose. This was explained through such forums as focus group feedback on teaching and learning; partners in assessment criteria development; key leaders in leadership council portfolios; and organisers and presenters in typically teacher-oriented forums.

7.7.1 Strategies and facilitators of the whole-person model

Among the three principals who offered some potential strategies for facilitating the adoption of whole-person principles, two mentioned commencing the school day with school-based (healthy) breakfast and physical activity—not only to ensure the students were

'primed' for learning, but also as an avenue for improving attendance by making the school a desirable place to be:

> *If we're going to improve learning, we've also got to have our kids eating of a morning, such as the availability of a healthy canteen. We have physical activities at 8 o'clock. Equipment is just put out in the quad for the students to use. The aim—at least—is to appeal to the students' sense of smell, feel, touch—activity combined with early morning cooking. Hopefully we can get them to school early, not by rousing on them or putting them on detention which ultimately reinforces negative aspects of school (P-100).*

Another common thread in the strategies suggested was an increased fluidity in the school routine (such as a later start time, partitioning of the school day into two halves), and physical context (such as open/shared areas for reading and relaxing, bigger rooms with group tables). Another resource-dependent proposal related to smaller classes to enable an improved ability to cater for individual student needs.

Similarly, a more flexible delivery and holistic view of both process (teaching practice) and content (curriculum) incorporating rich cultural and artistic programs was perceived by two principals as potential facilitators of a whole-person model view of education. This also translated to the adoption of (NSW) Quality Teaching concepts incorporating cross-curricular and co-curricular activities, knowledge integration, peer teaching and problem-based learning classes, as well as partnerships with external and community organisations/industry:

> *[The curriculum] is too prescriptive and I don't think its effective because in the end all you get is just lip-service to things. If you want real stuff, you need to have schools constructed in such a way that it has some fluidity. You can still have your subject-*

based approach: language class and your science, maths, English etc. Or you might go to something that's a blend of those: you might go to a creative challenge class which mixes problem solving, team building, creative challenges (P-400).

Yet another principal saw great potential in being able to offer more holistic electives in Years 9 and 10, focusing on teaching skills to help form the foundation of a healthy and happy mind/body, such as meditation, resilience and relationship skills. One principal acknowledged that the adoption and acceptance of such holistic processes largely depended on staff support and an intrinsic belief in the value of whole-child principles.

7.7.2 Barriers to a whole-person model

Commonly mentioned were the significant system barriers over which schools and principals felt they exercised little control. One principal noted the line between increased accountability—in the form of NAPLAN, PISA and the HSC—which placed enormous pressure on cramming, competing and generally ensuring time was spent keeping up with the expectations. Target setting was commonplace; yet, elements of the whole person were not measured and it was believed that they, therefore, do not receive the necessary attention that they deserve. Meanwhile, principals wait for the next round of data provided to them by the Department of Education on how they compare to the state. One principal noted:

We live in a world of what can be measured. This has always been a problem—our inability to be able to measure things [that are] difficult to measure. There is a question of whether we want to go down that track anyway—more data on our children, one competing with the other in other areas of development. There may be some inevitability—a future of microchips etc; but until such time, we are competing against huge forces (P-100).

The requirement dictated by the Department of the amount of time (hours) devoted to certain subjects was similarly perceived to necessitate a certain amount of compartmentalisation of content, which effectively prevents the flexibility and creativity in curriculum delivery that was felt to underpin the whole-person model. It could be argued that these indicative hours could, and can, be adjusted in somewhat creative ways. However, principals felt that the prescribed curriculum does not come with an 'in-built adapter' and, therefore, there was a risk of placing students in a precarious position by comparing them to their peers in the majority of schools (and not meeting the prescribed requirements).

7.8 Importance of co-curricular activities

Principals related the importance of co-curricular activities to perceived student outcomes. All four principals expressed strong feelings towards the need for connections that are facilitated through co-curricular activities:

> *[The role of curricular activities is] massive ... huge. Everything that goes on outside the classroom is what makes our education vibrant ... It's always about self-worth, self-esteem; it's about culture, it's about how all that works together. Quite obviously, connected learning has to underpin all of that ... We do the syllabus well, but it's bigger than that. It's much more than our standard syllabus and it has to be (P-200).*

While literacy and numeracy skills were acknowledged as important for navigating the world, one principal had firm views on the contribution of co-curricular activities in shaping the true essence of students as people (i.e., 'what makes a person a person'). The kinds of skills and attitudes discussed in relation to ideas in the area of co-curricular programs was, for one principal, presented the opportunity to extend students' skills in, or exposure to, other subjects such as the arts, including music, singing and poetry:

I've got this group of students every year that like to perform, that like to act; these are the things I think that make us human and make us happy. I wish I had a drama space; I wish I had a creative arts and performance space; I wish I had a recording studio for kids to be able to record their music and to make their films ... imagine if the school could create its own little film festival, and you know, kids could make up stories ... [W]hy shouldn't schools be these place? It's through those activities that kids are using language, drawing on other subjects including mathematics. This underpins the [NSW] Quality Teaching framework - it's about connecting and about making the learning significant (P-400).

One principal talked of anecdotal benefits to students in terms of maturity and social skills. This principal spoke of the benefits of a Year 10 personal training course, including improved academic performance and other benefits extending beyond the more immediate, expected outcomes, such as student confidence, diet and overall attitude:

We had 15 students do a personal training course for instance, [and] we had four parents [who] said, 'This was so good for my son ... my son ate junk food and now he's eating so healthily ... he has such a better attitude in life and he has become more respectful ... he's more confident'. You could see their confidence building. And part of staying in the program was that they had to maintain their studies. But because they loved the course so much, they maintained their assessments and their homework ... some of them even picked up (P-300).

This was mirrored in another principal's report of significant results in observations through the coding of activities using the NSW Quality Teaching model, in which 17 co-curricular programs are coded. The principal noted that this process showed high results across the full range of 18 elements—results, he said, were equal to or slightly above the

mean of results from classroom observations. The principal stated that the level of student-led involvement, the range of equal support of each member and the intellectual quality as an active learning construct were all noteworthy. These programs ranged from a video recording activity to debating and a range of sports (from the early stages of coaching through to the game). Another principal had witnessed a host of positive student outcomes from mentoring programs with external agencies. In general, the observations from nearly all principals was that co-curricular activities assisted students in making connections in their learning; that is, they were able to bring to life and extend their learning skills and develop a sense of ownership and excitement in relation to their learning, which also assisted with goal-setting.

Another principal shared very similar accounts of theme-based classes, problem-based learning, student committees grounded in meaningful goals and activities that created opportunities for the development of critical skills, such as analytical thinking and team work, while also producing desirable and important by-products such as increased enjoyment of core subjects through relevance and improved attendance. In fact, the perceived importance of co-curricular activities was evidenced by their inherent facilitation of the complete range of established Quality Teaching parameters, posed by one principal as: 'If a co-curricular activity can do that, then what have we been missing out on all this time?'.

The indicators principals were looking for as evidence of successful implementation of a co-curricular program, included factors related to enhanced student outcomes, for instance, connections to enhanced skill development leading to improved academic results and attendance; increased student connection to school and to learning and, therefore, satisfaction; effective teaching processes, such as incorporating student-centred learning and self-reflection; and improved involvement of parents and community.

7.9 Summary

The principals' perceptions voiced in this study amplified a sizeable divide between articulated 'purpose of schooling' at a more formal level – governed by state, national and global imperatives, versus the on-the-ground reality of the complex leadership of high schools in disadvantaged contexts. There is a clearly expressed desire by principals to be free of the competing demands that are the result of the larger politically driven policy-making decisions, that include the notion of having to compete in what is often termed an 'uneven playing field'. More specifically, the socio-economically differentiated schooling choices, together with the complex demands of curriculum constraints, bureaucratic requirements and accountability agendas were notable barriers to 'holistic schooling' identified by school principals.

Social and economic disadvantage is exacerbated by the perpetuation of intergenerational factors that inevitably lead to lower expectations and motivations. Many young people and their families are situated within a cycle of failure that includes inadequate lifestyle habits and poor servicing of urban environments on the fringe of major cities. Principals felt saddened by the circumstances of their children and felt constrained and desperate to free their burdensome responsibilities and constraints. They were keen to provide a more holistic or whole person model that related to context and widened the range of creative human endeavours for young people. This study opens a door to an insider's view of government high school principals in western Sydney. These leaders are attempting to meet the needs of not only young people in an increasingly competitive environment, but for many of their families struggling in a cycle of intergenerational poverty. The study also provides a contextual narrative to some of the barriers noted in the thesis, and an impetus to the notion and place of a whole person approach.

Discussion and conclusion to this study will be provided in Chapter 8.

Chapter 8: Discussion

8.1 Overview

The purpose of this chapter is to explore the major findings that emerged from the three studies, particularly in relation to the research objectives and existing evidence. In addition, the main strengths and limitations of the current study are discussed and recommendations for future research proposed.

The overarching aim of this thesis was to explore the extensive and complex factors that act as barriers to effective educational outcomes in disadvantaged high schools. The specific objectives of this thesis were to:

1. investigate the feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school
2. examine the physical, social and emotional wellbeing factors associated with academic performance in a sample of students from disadvantaged high schools
3. explore principals' perceptions about the purpose of schooling and the barriers and facilitators to effective educational outcomes in disadvantaged high school communities.

8.2 Study findings

8.2.1 Study 1

The objective of Study 1 was to investigate the feasibility and impact of incorporating a health intervention (registered nurse) as part of a learning support team in a disadvantaged high school.

8.2.1.1 Synopsis of findings

The findings of this quasi-experimental pilot study, involving semi-structured interviews of staff and families, are discussed in relation to the hypothesis that undiagnosed or poorly managed health issues among young people in the low range of educational outcomes are high and add an additional barrier to the likelihood of supporting their educational outcomes.

The group of identified students in this study recorded very low NAPLAN scores and were selected for the school-based intervention due to their scores being in the lowest 25% of their Year 7 cohort (reading age predominantly in the range 6–7 years). The nurse identified up to seven health problems per child (mean = 3.4), ranging from serious neglect to minor problems, such as uncorrected vision or hearing. Identified health concerns included vision problems (53% for the Year 7 cohort compared to 15% for the Year 7–9 cohort) and ADHD/Asperger's (21% for the Year 7 cohort compared to zero recorded for the Year 7–9 group). Mental health was found to be an overall concern for both groups, with 21% and 30% for the Year 7 and Year 7–9 cohorts respectively. Results for educational outcomes (NAPLAN band scores) indicated a positive result. The majority of the study group were below the minimum standard upon entering Year 7 and, by Year 9, the majority were close to the minimum standard; that is, they improved by at least one band, with 42% increasing by two bands (expected growth between Year 7 and Year 9 is 0.75 of a band).

There is limited recent research related to school nursing in Australia, particularly when seeking comparability to the aims of this study (e.g., see Guzys, Kenny, & Bish, 2013). Studies conducted in the US, Canada, UK and New Zealand typically address the role of nurses with limited extension to the effect on student outcomes (health and/or academic). For example, a New Zealand study on the effectiveness of secondary school nurses in low socio-economic areas observed that 19% of students had received no health care in the previous

year and concluded that there was a positive impact when nurses are fully involved in health support and intervention. However, the study did not provide any specific outcomes regarding the impact on students or their educational outcomes (Kool et al., 2008).

Many families from poor communities have low health literacy, which is known to be a barrier to accessing health care (DeWalt & Hink, 2009; Levesque, Harris, & Russell, 2013). DeWalt et al. (2009, p. 265) undertook a systematic review of the literature and found that child and parent literacy 'seems [to be] associated with important health outcomes', while acknowledging the difficulty of measuring health literacy as a single variable due to most research articles focusing on general reading ability as a proxy measure. The difficulty in navigating the health system is a symptom of various factors that include an inability to identify or respond to a health event ('identification of candidacy'),[9] which for many families is often an acceptance of the problem as being 'just the way it is'. For parents and carers, there is often an accumulation and cycle of circumstances that include a history of their own upbringing, poor mental health and complex family dynamics that on many occasions appear in the form 'of a crisis', and in which proactive use of health services is not strongly evident (Dixon-Woods et al., 2006, p. 7). In our study, the addition of a nurse provided a calm and knowledgeable voice that was able to provide families with clear and concise information, linking the advantages of health intervention with the child's learning. This was evident with one family when the nurse organised an eyesight check for their child. When the issue was rectified, it resulted in improved reading scores and subsequently prompted the parent to have the child's other siblings assessed.

The multiple layers involved in a large and complex health system often prove very difficult for families, many of whom struggle to navigate access to health services. For

[9] The findings are described according to the categories used in the construct of candidacy (Dixon-Woods et al., 2006; Peiris, Brown, & Cass, 2008).

example, they may be unable to visit specialists for a variety of reasons, such as a lack of understanding of their role; the complexity of the referral process and typically long waiting periods for appointments; and significantly higher fees for service, especially as many families do not have private health insurance. In our study, a troubling case was recorded of a family whose autistic child had been on a waiting list for more than two years for orthodontic intervention to address issues affecting his eating. His mother would cut his food each night to prevent bleeding. Following the nurse's intervention, it was discovered that the health service had misplaced his paperwork. This example represents a range of concerns for many families living in disadvantage, including an inability to use their 'voice to demand better and extensive services' ('appearance at health services') (Dixon-Woods et al., 2006, p. 8).

As cited in our study, when parents 'don't know how to talk in the language' of the professional, the mediating role of the school nurse can be critical in providing a comprehensive written report to the medical professional and ensuring appropriate follow-up. Without this extra support, families in disadvantage can be subject to 'implicit social criteria about which patients' "ought" to receive care' (Dixon-Woods et al., 2006, p. 8); that is, there is the view that disadvantaged groups are less likely to take care of themselves. Given higher levels of poor health behaviours, such as smoking, overweight and a range of comorbidities, their health concerns are treated less seriously than those of people in more advantaged groups.

The availability and accessibility of resources and services for disenfranchised groups ('operating conditions') can be further challenged by a health system with large, often fragmented and poorly coordinated services (Dixon-Woods et al., 2006, p. 8; Peiris et al., 2008). While the Australian health system is considered good by world standards, there is a call for the system to move forward and cater for significant shifts in population health towards more complex chronic conditions (Horvath, 2014). Attempts to coordinate services

saw the establishment of Medicare Locals in 2011. After a review of this model by John Horvath, the current Primary Health Networks (PHN) model was adopted in 2015. Globally, this joint approach between public health and primary care is not common and, if successful over time, Australian attempts will greatly benefit families who struggle to understand the many parts of the system (Booth et al., 2016; Elnour, James, Dale, & Paresh, 2015; Horvath, 2014). In our study, the local Indigenous health service was noted by the health nurse as well structed and coordinated and she anticipated a similarly coordinated public health model with which she could readily liaise ('Marumali' Health, South Western Sydney Primary Health Network, 2017).

This pilot study highlighted a range of health issues for low-performing students, the important link between chronic (and at times acute) health issues and meeting the spectrum of student outcomes, including academic performance. The critical link between health and schooling (and, therefore, learning) is well supported by empirical evidence regarding socio-economic inequality and developmentally poor health indicators in the early years (AIHW, 2017; Bradley & Greene, 2013; Currie, 2009; Green et al., 2017; Jackson, 2015; Lamb et al., 2015; Nicholson, Lucas, Berthelsen, & Wake, 2012). Early detection of observable vulnerability in socio-economically disadvantaged groups is highly desirable, particularly early in a child's life, with the possibility of preventing or mitigating many adverse health and learning outcomes later in life (Green et al., 2017; Nicholson et al., 2012). Health researchers also advocate early intervention with the support of health nurses in preschools and primary schools (Williams & Dickinson, 2017). Finally, much of the research regarding health nurse intervention in school communities concerns role definition and clarity, and training and record keeping, which will also assist further research (Maughan, Bobo, Butler, Schantz, & Schoessler, 2015; McDaniel, Overman, Guttu, & Engelke, 2013).

8.2.1.2 Strengths and limitations

The strength of this study is the high acceptance of the health nurse in the school, as indicated through interviews with the nurse, parents and teachers. The candidacy model provided a good framework in which to canvass views about effectiveness and, thereby, enables further opportunities to expand on this study, through a range of other avenues regarding nurse support for health and learning. This pilot study has some limitations that should also be noted. First, the study involved a small sample (n = 19, n = 20 respectively; the first group represent 21% of the lowest academic performers in the incoming Year 7 cohort), so the findings have limited generalisability. The high rate of dropout is a further limitation—although perhaps not surprising for this category of student in disadvantaged communities, according to Australian empirical evidence indicating that the lowest performing students are often highly transient (Longbottom, 2015)—and there is a degree of poor attendance, as well as disengagement to learning (Lamb et al., 2015). The noted margin of error for NAPLAN (Wu, 2009, 2010) is another study limitation.

The efficacy of the multi-methods approach might be enhanced in future studies by including a measure of general health, such as the Child Health Questionnaire (CHQ) (Waters, Salmon, Wake, Hesketh, & Wright, 2000; Waters, Salmon, Wake, Wright, & Hesketh, 2001), to determine whether changes in educational outcomes are associated with changes in perceived health status. The study did not include the CHQ due to the costs involved; although, the bio-psychosocial nature of many of the health problems identified in this pilot study is consistent with the CHQ's dimensions. Consideration should also be given to using the Ottawa Charter for Health Promotion as an additional framework for deductive analysis (Su, Sendall, Fleming, & Lidstone, 2013; WHO, 1986). This framework supports the potential to also include anthropometric measures, such as height, weight BMI and skin-fold test, and would provide additional objective measures of health benefits.

8.2.1.3 Summary

This pilot study has demonstrated the feasibility and potential efficacy of incorporating a primary health nurse in a learning support team in a disadvantaged high school. The addition of the nurse to the support team was valued by both the high school staff and the families of the children assessed. The study identified considerable unmet health needs affecting children's ability to learn and highlights the importance of providing families with additional support in accessing required health care. The capacity to improve health outcomes and, therefore, learning outcomes in a proactive way is evident, particularly in disadvantaged contexts in which individual and family advocacy is not as strong as it is in more affluent communities.

Further substantive research is required concerning the implementation of school-based health services (nurse-led) in high schools, and equally in primary/elementary schools, in conjunction with an 'inter-service, collaborative, national framework' (Williams & Dickinson, 2017, p. 536). Correspondingly, US scholars have noted the lack of a comprehensive, integrated model that links schools, students, parents, health care and other community providers (Erickson, Splett, Mullett, & Heiman, 2006; Johnson, 2017).

The study findings noted the issue of health literacy for families – more generally identified as low-level child and parent literacy (reading) capacity. This is also recognised as a symptom of intergenerational poverty and include factors such as poor school completion rates, for example, in Study 1: the school community identified 32% of adults not completing Year 9 (2015), in addition to historically poor levels of pre-school enrolments and transition levels of students from primary to high school in which literacy levels are considerably behind the state mean. The Implications outlined in the final chapter highlight a range of comprehensive and integrated school-based community projects which when interwoven within the school's teaching, learning, curriculum and student leadership practices can

provide enhanced benefits including confidence levels for young people over the long-term. The NSW syllabus – Personal Development, Health and Physical Education – also provides an additional opportunity for students to enhance their 'health literacy' skills in which they develop their understanding and critically analyse information and services that promote and maintain health and wellbeing (New South Wales Education Standards Authority, 2018).

Health economic evaluations are required to determine potential long-term benefits to society of employing nurses in disadvantaged schools. A systematic review of the literature noted the cost–benefits in terms of a reduction in health disparities for young people and their access to health services (Mason-Jones et al., 2012). Moreover, evidence of the links among poor child health (including foetal health, which means protecting the health of mothers), low SES and human capital development underpins the 'intergenerational transmission of economic status' (Currie, 2009, p. 87). This wider evidence, reinforced by our pilot study, highlights the need for further empirical work in this area, including multi-site longitudinal studies with long-term follow-up to explore the link from the early years to high school.

As acknowledged in the thesis outcomes and discussion there are many complex components requiring bold coordinated action in order to build and embed the overall confidence of and accessibility for services to young people and families in poor communities over time.

8.2.2 Study 2

The objective of Study 2 was to examine the physical, social and emotional wellbeing factors associated with academic performance in a sample of students from four disadvantaged high schools.

8.2.2.1 Synopsis of findings

Students in their first year of high school (Year 7), from four disadvantaged high schools, were found to have considerably lower educational outcomes, as measured by NAPLAN, than the expected minimum national standard (ACARA, 2017). The result was consistent for all demographic categories and was broadly consistent with research regarding demographics, socio-economic equality and student achievement in Australia (Ford, 2013; Marks, 2014).

The extent of the learning gap for students in disadvantaged school communities entering their first year of high school is concerning. In this study, students' NAPLAN scores were between two and three years' growth (one to two NAPLAN bands) behind their state peers (ACARA, 2012; South Australian Department of Education, 2016). As the average increase in growth from Year 7 to Year 9 is equivalent to approximately 0.75 of a band and the rate of growth gradually reduces from the primary years through to the high school years, the capacity of schools in disadvantaged contexts to build success, as defined by NAPLAN, for students entering Year 7 with low prior academic achievement is considerably more difficult.

The following brief summary of findings regarding learning outcomes (NAPLAN) will assist in interpreting other results. My study confirmed gender differences, as noted in national trends for both literacy and numeracy (ACARA, 2012). According to the 2012 figures, girls were ahead of boys in literacy (reading) by 12 score points and boys were ahead of girls in numeracy by nine score points. Within the context of lower NAPLAN results

overall, girls in this study are only slightly ahead of the boys in literacy. More concerning is the gap in numeracy, with girls being behind the boys by the equivalent to a year's growth (21 score points). While the general gap in numeracy between boys and girls is not unusual (Marks, 2014), the magnitude of the gap for girls in this study compared to national trends requires serious attention, particularly considering that gender gaps are likely to increase throughout the school years (Buchmann, DiPrete, & McDaniel, 2008).

Learning outcomes for Indigenous students in Australia continue to be problematic when compared to the overall population (Ford, 2013). In my study, numeracy scores were between one and two years' growth behind the overall state mean. Additionally, both literacy and numeracy scores for Indigenous students were approximately 16 points behind their NSW Indigenous peers within their equivalent ('provincial') geographical location (ACARA, 2012). The influence of educational disadvantage within the urban environment generally should be considered a factor that further compounds the often already difficult circumstances of these students (see also Amosa, Ladwig, Griffiths, & Gore, 2008).

LBOTE students are typically defined as students who speak a language other than English at home, or who have parents speaking a language other than English at home (ACARA, 2012). However, the LBOTE category is extremely diverse in terms of language capacity, 'ranging from native speakers of English whose parents are bilingual [to] all ESL learners' (Creagh, 2016, p. 257). Consequently, variation in results for these students conceals a considerable number of factors that may influence performance. The gap for LBOTE students in NSW is not significant at Year 7 (ACARA, 2012). Yet, in my study, NAPLAN scores for reading were lower for both categories of overseas-born and LBOTE students, with a considerable gap for those not born in Australia. As for Indigenous students, the educational disadvantage faced by students in both of these language-related categories

should be recognised as further compounding their circumstances, especially for those not born in Australia.

8.2.2.2 Physical wellbeing

In my study, students' CRF levels (i.e., physical wellbeing) were not significantly associated with NAPLAN reading or numeracy. The results also showed that students scored in the low-SES range for physical activity and health-related fitness (Hardy, Mihrshahi, Drayton, & Bauman, 2017).[10] Surprisingly, boys scored much lower than girls in the 'needs improvement' category (the opposite of the general trend) and lower overall compared to the low-SES category. The reasons for this trend regarding boys in particular requires further investigation and may have further implications.

A large and growing number of studies have observed positive associations between young people's physical fitness and their cognitive functioning and academic achievement (Booth et al., 2014; Khan & Hillman, 2014; Tomporowski, 2016). Research indicates that children's mental processing can be enhanced through exercise participation. Evidence exists for both chronic and acute exercise interventions, demonstrating changes in brain structure and function and enhanced performance on tests that assess information-processing efficiency, executive control and memory (Burton & VanHeest, 2007; Hillman, Keito, & Scudder, 2011).

A systematic review of evidence for the relationship between CRF and academic achievement reported general support for the beneficial effects (Marques, Santos, Hillman, & Sardinha, 2017). However, this review noted that the literature has not yet reached consensus and acknowledged some limitations in the studies, including sample size and overall research design differences. Physical activity behaviours are closely connected with a variety of health-related fitness traits that include CRF (Lang et al., 2018). A review of research

[10] As per the 2015 NSW School Physical Activity and Nutrition Survey (SPANS).

focusing on physical activity and academic performance found at least one or more positive associations with school-based physical education classes; at least one or more positive associations with recess physical activity; and one or more positive associations with extracurricular physical activity (Rasberry et al., 2011).

8.2.2.3 Strengths and limitations

Researchers have commented on the difficulty of validly and reliably measuring physical fitness for young people (IMNA, 2012; Plowman, 2014). The progressive shuttle run (also known as the multi-stage fitness test) is considered to be the most appropriate field-based measure of CRF (IMNA, 2012). The null findings in the current study may be due to several factors and include the limitation of only using one measure of physical fitness. All students in the study are from low-SES contexts, in which low levels of fitness are typically found, thus contributing to an inability to detect significant associations (Hardy et al., 2017). Further, additional limitations may be associated with personality characteristics and motivation (including desire to try their hardest), as well as other behaviours related to eating habits (e.g., many students do not have breakfast or eat during the early part of the day) and disrupted sleep patterns (e.g., high levels of poor sleeping habits, often associated with technology use) (see Dumuid et al., 2017; Khan & Hillman, 2014).

8.2.2.4 Social wellbeing

QSL was not significantly associated with NAPLAN reading and numeracy in the current study. Related studies are limited and those that are available have used study samples that are not in the age range of my study. For example, Australian research involving a large sample of Year 12 students provide somewhat comparable trends across the subscales (Mok & Flynn, 2002). Students on average generally have positive experiences of school life, as indicated across all subscales; however, average scores are a standard deviation less than the findings in a study undertaken by Mok and Flynn (2002). Both studies show that

‘alienation’, or negative effect, is the lowest scoring subscale (e.g., the question ‘my school is a place where I get upset’).

There is sound empirical evidence of associations between the broader environment in which young people grow up and their confidence to interact with others and the world around them (Cohen, McCabe, Michelli, & Pickeral, 2009; Edwards, 2005; Flores, 2004), especially in areas of disadvantage (Evans & Cassells, 2014). My study aligns with research in the area of QSL that highlights the need to embrace a comprehensive and socially positive environment in the early years (Magnuson & Duncan, 2016).

In an original form of the QSL assessment used in this study, Ainley (1995) sought to assess a wider view of the purpose of schooling, starting from the premise that school effectiveness was about more than academic achievement. He found evidence of a ‘link between favourable views of school life and the adoption of a deep approach to learning’, as well as evidence that aspects of school life linked to academic achievement included a sense of achievement, relations with teachers, general positive views of school and a sense of the relevance of school work (Ainley, 1995 p.14). More broadly, a study of the QSL in Finland and Korea discovered that students’ views were less positive than the average for views of adolescents in OECD countries (Yoon & Järvinen, 2016). The researchers noted, however, that further research should consider the notion of school as a social environment in which its members share experiences through a communal lifestyle, and that school ethos, student autonomy and democratic participation in learning should be investigated as part of a mixed methods study of the two countries.

8.2.2.5 Strength and limitations

The QSL assessment is well supported as a measure (Kong, 2008; Mok & Flynn, 2002). Null findings in this study may be due to several factors that include the nature and influence of a student’s family and background characteristics (Croll, 2004); the restriction of

a single assessment (QSL); factors associated with self-reporting; and an overall inability to distinguish school-related effects and external effects (such as home and neighbourhood). Moreover, student responses in the study are based on a relatively short period of time of experiencing high school life and further studies that determine students' views of school over time and the relationship to their academic results will be of interest.

8.2.2.6 Emotional wellbeing

EI was significantly associated with both literacy and numeracy. The positive result for emotional wellbeing in my study provides an opportunity to further investigate the link between emotional, mental and spiritual wellbeing—a worthwhile area of research for supporting young people across the school years. Comparable studies regarding score comparisons are limited due to age sample differences. In one study of students across Years 7–11, the students recorded similar EI scores across the four dimensions (Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008).

Emotional wellbeing relates to self-awareness and emotional regulation and includes one's ability to cope and build resilience, as well as a capacity to self-reflect (NSWDoEC, 2015). More specifically, EI can be defined as a series of abilities relating to how we understand, express and utilise decision-making processes and manage emotions. Children develop their capacity to understand, effectively express and manage emotions as they get older, although there is great variability among children and adolescents (Swinburne University of Technology, 2018). The self-assessment for EI undertaken in this study (SUEIT) sought to determine the ability of young people to understand the emotions of others; an ability to recognise the feelings of others; emotional self-management and control; and a capacity to utilise both emotion and cognition when problem solving (Luebbers, Downey, & Stough, 2007).

A recent systematic review of research identified a consistent positive association between EI and academic achievement in young people (Chis & Rusu, 2016). For example, one Australian study using the SUEIT assessment (209 students) reported that EI was generally positively associated with performance across school subjects (Downey et al., 2008). Another Australian study of EI and scholastic achievement in preadolescents (with a similar sample size to my study, although with a different age group of 9–13 years old) found 'partial support for the predicted relationship between EI and scholastic achievement'. That is, significant partial correlations were observed between 'understanding and analysing emotions' and scholastic achievement (Billings, Downey, Lomas, Lloyd, & Stough, 2014, pp. 3–4).

8.2.2.7 Strengths and limitations

My study found a significant association between NAPLAN and EI and aligns with other studies that support the relationship between EI and academic achievement. It also provides an opportunity to explore further ways in which EI can be developed in the early years as students' progress into high school and how it may support other whole person elements. Yet, there are some important limitations to be considered. Scholars have noted the 'difficulty in ascertaining the level of insight children have into their own subjective EI abilities, and [therefore] how these will affect respon[ses] to self-reported items' (Billings et al., 2014, p. 4). These same scholars also highlight the desirability of controlling for personality and cognitive factors in future studies, in predicting scholastic achievement over and above personality and IQ. Current research utilises various forms of academic achievement, including GPA through subject-based results and standardised assessments (as used in my study). These different methods of assessment need to be considered when comparing results.

8.2.3 Study 3

The objective of Study 3 was to explore principals' perceptions regarding the purpose of schooling and the barriers and facilitators to effective educational outcomes in disadvantaged high school communities.

8.2.3.1 Synopsis of findings

This study highlighted a range of tensions and concerns held by principals about the purposes of schooling, primarily in relation to what constitutes 'desirable student outcomes'. Several scholars identify the same tension as noted by principals; that is, the tension between schooling as a public good and its alignment by governments to a market ideology of social efficiency and mobility (e.g., see Cranston, Kimber, Mulford, Reid, & Keating, 2010; Labaree, 1997; Reid, 2012b). The principals expressed a strong desire to refocus on a more rounded preparation for young people as highly skilled and well-adjusted citizens who are equipped to move beyond their current circumstances and are able to confidently deal with the challenges ahead. There are many structural and systemic barriers faced by their schools that affect principals' leadership role and challenge their ability to balance a broad range of strategies in meeting the needs of their students. The principals expressed strong support for a holistic, or whole child approach, to supporting young people, with a wide variety of interpretations about how that might be achieved in their schools.

Principals' judgement about educational purpose and outcomes were typified by a desire to transcend the current 'straight jacket' emphasis on literacy and numeracy—acknowledging the importance of higher-order teaching and learning—and to embrace a range of 'life skills' that enable young people to grow in confidence and resilience and feel a 'sense of happiness, optimism [and] a sense of self-worth' as they move beyond their current circumstances. A high school principal in South Australia summed up his goals, stating: 'I want my kids to be happy. But I don't want my kids to be happy and poor' (Bills, Giles, &

Rogers, 2017, p. 197). Further, in a study about leading schools in 'turbulent times', Harris and Jones (2017, p. 1) observed principals' 'inherently personal and moral perspective' to 'fundamentally connect to the wellbeing, learning and protection of all young people in their care'.

The barriers that principals considered restrictive to their effective leadership covered a broad range, including political and bureaucratic obstacles such as the expanding number of policies viewed as being 'handed down' to schools with an imposed 'one size fits all' approach; standardised testing; and a crowded and 'ever-expanding curriculum' that, together with the 'compartmentalisation of subjects', challenges a more flexible learning culture. Observing the 'scripting and ritualising' role of public school leadership in Australia, some scholars have indicated a diminished 'self-managing' aspect of the principal's role to becoming 'implementers of external policy' (Fitzgerald & Savage, 2013, p. 139; Smyth, 2011). These extraneous demands were felt by the principals in my study to constrain their ability to provide the quality of education they envision. One principal alluded to the idea of schools and principals assuming a more active role in lobbying and shaping policy. In general, as Bills et al. (2017, p. 197) observes, principals 'work creatively and tactically to buffer or confront system requirements that represent a threat to student learning'. Other scholars have documented the extent of principals' efforts to keep everyone happy—the school, community and the state—through well-intentioned deception, or what has been called 'principled infidelity' (Fitzgerald & Savage, 2013; Hoyle & Wallace, 2007, p. 9).

Process and policy barriers mentioned in the study included the imperative to 'compet[e] with other schools [and] having to attract students'; local students drawn to nearby elite schools leading to restricted curriculum choices due to falling numbers; a resultant school image problem in the community; and related challenges to teacher morale. These compounding factors had a 'critical impact' on the principals' ability to focus on

learning and the needs of their students (see also Cranston et al., 2003 on principal role overload, ambiguity and conflict). Many studies have examined how NSW government–comprehensive high schools have been isolated through the growth of a stratified system of schooling—particularly in the government school sector—and the effects on school leaders, teacher morale and confidence in building a positive school culture (Considine, 2012; Vinson, 2002).

Socio-economic and community factors affecting parents were observed by some principals as being grounded in a generational, long-standing failure of previous schooling systems to support them. Some principals commented on a resulting 'low parental expectation for academic success', which contributes to a self-fulfilling prophecy that sees children equally struggling with a lack of confidence and self-efficacy that at times leads to a low output in academic requirements and performance in external assessment. This perception of system failure over time could be interpreted as a 'double exclusion', whereby the structural social forces that produced the problems of the past for disenfranchised populations, appear again in the form of processes intended to bring about equitable change (Smyth, 2010, p. 125).

There was a great sense of enthusiasm among principals regarding the concept of a whole child model as a means for helping students break out of a cycle of failure, while enhancing the sociocultural environment in which the students work and live. A range of poor lifestyle habits among students were noted by the principals, who recognised that a holistic approach could support their needs in areas such as nutrition, exercise, personal development and social welfare. However, in attempting to implement such ideas, they were often thwarted by an overbearing amount of time spent on 'things not directly impacting on the classroom'. This sentiment was also found in the study undertaken by Bills et al. (2017, p. 203), in which a high school principal described the 'sad stor[y]' of 'the absence of [attention

to] the affective domain in dialogue from state office around what is actually important in student achievement'.

8.2.3.2 Strengths and limitations

This study adds to a small but growing body of research on Australian government high school principal leadership that involves the voice of principals in diverse high school settings and garners their perceptions of the role (see Bills et al., 2017; Cranston et al., 2003; Niesche & Keddie, 2011), including educators who aspire to the role (Cranston, 2007). Perceptions of principals in jurisdictions outside Australia offer useful sources of comparison (Medina, Martinez, Murakami, Rodriguez, & Hernandez, 2014; Steward, 2014), in which settings are not too dissimilar in structure (e.g., in the US and UK).

8.2.3.3 Summary

The purpose of schooling, as expressed in the desired outcomes for students, is a critical place to start when seeking to assess whether educational outcomes are being achieved. At a minimum, articulations of purpose require clarity; should be meaningful and of consequence to teachers, students and community; and constitute part of a broader sense of social order and coherence (Damon, Menon, & Cotton Bronk, 2003; *The transectional structure of society*, 2014). This study challenges the extent to which Australian statements of schooling's purpose meet these criteria—a theme emerging in the work of other scholars on the role of public high school principals in Australia (Cranston et al., 2003; Harris & Jones, 2017; Niesche & Keddie, 2011). This study, involving four high school principals in a disadvantaged community, provided insight into their concerns and the conflicts they face in attempting to realise their versions of 'desired student outcomes.' In constructing a vision for their schools that has students' holistic wellbeing in focus, they often feel they are 'engaging in the process of faithful improvisation' (Bills et al., 2017, p. 207). The principals provided a

range of insights into their preference for seeing their school and its students engaged in a much broader set of learning ideas, including an emphasis on a whole child approach.

The principals' articulation of the many barriers to desired outcomes is supported by many studies on the misalignment of educational purpose, or intent, between government policy and the reality of leading disenfranchised public high schools. Connell's (2009) characterisation of government rhetoric as demonstrating 'an extraordinary blinkered perspective' encapsulates concerns regarding recent policy directions. This criticism came in response to a government statement about an OECD report in which the social background and abilities of students were acknowledged as having the largest influence on student learning, and yet the government stated they were 'not open to policy influence' (Connell, 2009, p. 225). Empirical studies conducted in Australia reinforce the confusing and conflicted role principals are required to navigate. My study adds to that literature, demonstrating principals' ongoing desire to sort through the many barriers they face to ensure, as one principal noted, that we 'humanise learning'.

8.3 Conclusion

In this section, I discuss the wider implications emerging from my thesis, including future research, and provide some concluding remarks. The commentary is based on the overarching aim of this thesis, which was to explore the extensive and complex factors that act as barriers to effective educational outcomes in disadvantaged school communities, as reiterated in Section 8.1. In this discussion, I draw on insights from my review of literature on barriers to effective educational outcomes and the purposes of schooling in Australia, including influences from historical and contemporary perspectives and how they might be enacted. These analyses help to frame concluding implications for Australian schools.

Each empirical study highlighted a range of barriers impeding the educational progress of young people and then offered some possible alternatives. *Study 1*, on the

feasibility of incorporating a health nurse in a disadvantaged high school, emerged from my observation over many years that students entering high school were not only recording very low reading scores, they were also exhibiting a large number of poorly managed or undiagnosed health and medical problems. While this was a small pilot study, the data attests to a significantly high number of unmet health needs for the lowest performing quarter of the cohort. The study also drew attention to a range of complicating factors that contribute to families' inability to act upon and manage access to health and medical support for their children. The health nurse was welcomed by the school staff and community for the substantial support she provided, including a mediating role between students, families and a range of health and other agencies.

The study also revealed significant *disconnections* between disadvantaged communities and accessibility to various support structures. Key challenges were the inadequacy of knowledge and understanding within many families in disadvantaged communities about proactive care regarding health and its link to learning; an inability to have a voice or influence in networks or systems; and, a range of poor health and developmental outcomes that are evident from the early years and are often intergenerational.

In *Study 2*, the educational gap for Year 7 students in the four high schools equated to between two and three years' growth behind their state peers, across all demographic groups. These results signal an urgent need to investigate ways strategies can be implemented to promote student wellbeing across whole person dimensions, including ways of nurturing emotional wellbeing during the early years and promoting CRF to enhance students' physical, emotional and mental health. Students' social wellbeing is closely related to elements of physical wellbeing, as well as to the sociocultural environment of the school and its community. Strategies that connect students to each other and to school in a proactive way

will assist in fortifying this area of wellbeing for them, especially when suitably supported by all the key institutions within the community.

This study also exposed clear *disconnections* between disadvantaged communities and various support structures in education and society more broadly. Central among these disconnections is a general failure, at the policy level, to genuinely commit to a set of educational outcomes that include whole person wellbeing elements, which are currently minimised within a narrow, academically-focused and overly dense curriculum and educational measurement regime. These structural aspects of education perpetuate a broader lack of understanding of, and capacity to embrace, each of the whole person elements that are so important to the development of young people. The combination of structural, intellectual and practical constraints on whole person approaches to education have dire consequences for Australian school students, exacerbated by problems associated with dense poverty for those living in disadvantaged communities.

In *Study 3*, principals in the four high schools were most concerned about constraints on their ability to ensure students are at the centre of their focus. They argued that this requires an emphasis on a more holistic approach to curriculum delivery. Additional barriers included the ability of young people to overcome deficits in a range of health behaviours and life skills, as well as the principals' limited capacity to overcome community problems that, in most cases, they perceived to be symptoms of system inefficiencies. Key *disconnections* included the burden that principals felt from systemic barriers conflicting with their ability to enact a contextually appropriate vision for their community; the narrow focus on literacy and numeracy at the expense of a broader range of objectives; inadequate comprehensive structural support for disadvantaged school communities; and having to compete with other surrounding schools and build a marketable image.

8.4 Implications

The three studies, together with the literature reviews of Chapters 2 and 3, distil a common area of concern; namely, a *disconnection* between what is espoused by governments, bureaucrats and policy-makers, and what is enacted in schools. Such disparity is not unusual in most countries and in many areas of social policy. Yet, given the awful set of challenges facing young people in disadvantaged high schools demonstrated in this thesis, there is an urgent imperative to explicitly state and advise on alternative strategies to support them on their educational journey.

There is a binding responsibility in Australia, clearly articulated in our national schooling plan (MD) for comprehensive holistic support for young people. To have not fulfilled many of the expressed commitments and responsibilities is disappointing, especially when considering commonly held beliefs in the wider community about the importance of the holistic development of young people. Notwithstanding the need for continuing research in each of the elements of the whole person, there is currently ample empirical evidence to support this belief that our young people grow to be competent, happy, healthy, safe and contributing citizens in Australia.

Scholars who have investigated ways in which schools in disadvantaged areas can be better supported through local community-based attempts, have also offered cautionary advice. Firstly, it is widely accepted that schools are very limited in their capacity to undertake change regarding inequality and poverty and therefore have an impact on educational outcomes, without the support of many other system layers (Raffo, 2011; Thompson et al., 2012). Further, the overwhelming complexity of poverty, human development, and the broader sociocultural environment in which young people grow and develop mean that any proposed transformative solution may seem overly idealistic, requiring well-thought out structured proposals. Therefore, there is a necessity for all relevant

institutions to be at the intersection of transformative plans in order to expect any level of progress within communities (Raffo et al., 2009). Moreover, for change to take hold, institutions will need to share equally the responsibility for change and be prepared to break down current bureaucratic walls. That will include dismantling silos of strategic planning and instead be prepared to share many of their responsibilities under one central vision.

There will also need to be a reorientation of the dominance of the economic purpose of education – that currently co-exists with the goals and commitments of the MD – restored to its public purpose and to embrace the holistic vision articulated within it (Buchanan et al., 2011; Lovat et al., 2011; Reid, 2010b). Institutions that should be part of such a process with education, include housing, health, social services, local councils, transport, levels of infrastructure, working together with broad representative community voices including universities, philanthropic interest (see Wrigley et al., 2012).

When referencing models of change from overseas jurisdictions there is always a need for caution regarding the local and individual circumstances of countries. Nevertheless, there is something to be learnt from the way Finland was able to reach consensus regarding its school reform in the 1960s, and this was achieved through a union of their political elite, teacher groups, union and academics (Sahlberg, 2012).

In service to this imperative therefore, I argue that Dewey's notion of continuity remains as important today as it was nearly a century ago. In the slow progress of unifying the divisions in education and medicine, there is an opportunity now to build on the collective work of scholars from these and many other disciplines, with my own contribution to the way this can be brought together to support young people in disadvantaged communities.

8.4.1 Implication 1: Interconnected school community centres

Various researchers have sought to shed light on alternate ways in which community-based connections can address local outside influences in order to support 'internal school

processes' (Power & Frandji, 2010). In such models, the neighbourhood is subsumed into a wider structural, environmental and sociocultural milieu so as to support young people, their families, schools and community in a 'mutually reinforcing' way (Alexander, 2016, p. 19). The voice of community members becomes central to aligning the purpose of schooling with its enactment (Dyson, 2011; Raffo & Dyson, 2007; Raffo et al., 2009), as they participate in community planning processes in highly collaborative ways.

For disadvantaged school communities to reach a 'high quality of life' with education providing a central role in building an 'equitable, democratic and just society' – as noted in the Melbourne Declaration (2008) – there should be greater acknowledgement of the enormity of the task given to schools. There is an unrealistic assumption by leaders who are responsible for both the wellbeing of our population and the management of our economy about all Australian citizens capacity to 'compete in the global economy' (MD, 2008, p.4). As this thesis has demonstrated, families in communities of intergenerational poverty are often devoid of access to the various forms of capital in order to effectively take their place in the global market. It is critical therefore to review the role of significant other institutions in supporting schools. To be fully effective and functional over the long-term, school communities should be supported more proactively by government and their agencies in working together and be bound and driven by a shared purpose and strategic plans that connect. Sadly, such an alignment seems a very distant target and outcome within the sphere of current political will. It is ultimately left to communities and their leaders to garner enormous courage and energy to achieve effective collaboration and the desired outcomes.

When, as noted at the beginning of this thesis, the outer suburbs of Sydney were established in the 1960s, government bodies simply failed to connect. Decentralised industry, cultural facilities, rail proposals, and the green belt were withdrawn or reduced. The Housing Commission's desire to build as many houses as cheaply and as quickly as possible,

conflicted with the Cumberland County Council's green plan, resulting in land and homes baking treeless in the summer sun (Watson, 2015). Strategically, the community voice can appear faint when dominated by professional groups (see Kerr et al., 2016, p.279), unless a secondary layer is added to the choir of voices in harmonious ways. This, it is argued, is the 'middle ground' and requires strong, brave and sustained action and related research in order to strengthen school-community relations (Dyson, 2016, p.279).

While it is ultimately the responsibility of national and state authorities to provide high-level, equitable and sustainable structures and support for all, the more immediate likelihood of a supportive model emerging is for a school community to lead by example through the demonstration of evidenced-based strategies. The implementation of such a model requires considerable leadership, planning, commitment, foresight about a need for sustainability and time to be successful. It is desirable also for the model and its proponents to gain initial support of key state-level leaders across a range of institutions so that it is not at any point isolated in its desires, enthusiasm and ultimate care for its community.

This thesis identified the many significant issues and barriers to success for young people in disadvantaged communities. It also sought to explore more substantive whole-person approaches for achieving the stated purpose of education. The school at the centre of Study 1 may provide an example of an attempt to further extend its contextually designed connected work at the school level and into the broader community. The school health nurse program has been extended into the school's feeder primary schools, while the role in the high school is embedded within a range of support teams in the school. This role is consolidated within the school's operations and compliments a range of other programs that seek to support and provide for the continuity of health and learning of students from the early years to the end of high school and beyond.

The school, through the development of a range of complimentary programs that enable continuity of student development, is garnering the support of state-level leaders across a range of institutions. This include the leaders of government departments, financing and various universities to assist multi-disciplinary research. Supported by this research and evaluation of programs around the world, the school believes any attempt to progress through the stages of its interconnected model requires the establishment of school community purpose. The voice and spirit of its community members – including its extensive student leadership council (one-quarter of the school population) and growing number of Aboriginal and diverse cultural families, have sought to connect purpose to the spirit of 'place and space'. This connection in turn has a tangible link to the natural environment and a future-oriented sustainable urban design that embraces the school community's ethos. This notion is also important in garnering the growing enthusiasm of young Australians deep connection to the environment, and as noted in this thesis an important element of emotional and spiritual wellbeing and attachment (see Guardian, 2016).

Without constant reference to purpose the school believes that the interconnected whole person model will waver. While there is a long-term plan – viewed as a generational change and therefore the need for a realistic time-frame – there is scope for more immediate implementation of various programs – such as the health nurse – which provide short-term gains and allows for a sense of accomplishment. Overall, the embodiment of the whole person elements in a supportive schooling model links more completely to our understanding of human development. The notion of emotional wellbeing, for example, and its relationship to learning improvement provides a sense of deep connection and commitment for young people, grounded in the Dewey pragmatic approach and the link between learning and the emotions.

The school has also built a combination of connected school processes that have begun to extend into the community, for example, at the centre the highly regarded NSW Quality Teaching model (New South Wales Department of Education and Training, 2003) commenced by the school in 2004. A trial timetabled primary to high school curriculum pattern began two years ago in mathematics, science, the arts and physical activity. The school's seven-member allied health team is coordinated by a head teacher, and includes a speech pathologist, occupational therapist, an additional psychologist (clinical registrar), health nurse manager, dietician, art therapists and a public health graduate specialist. These professionals are employed by the school with a priority commitment to the school community including feeder primary schools and families. Allied health team members complement their proactive health-related work with highly specialised support for teachers in classrooms. This work is proving transformative and includes input by small teams of the specialist allied health experts working with teachers and students, that has resulted in a new wave of professional understanding of learning and its application particularly applied to students with complex learning needs. The health nurse program will be extended and include the training of additional health nurses (as it relates to the model) to be employed in other school communities.

Several university research programs will link to various arms of the program and its innovation, with support through evaluation of the model. For example, researchers will assist the development of a '0-5'-years' health identification profile and support for each young person. The health profile will link to a learning milestone profile, with the aim of this combination travelling with the young person throughout their schooling. The current developmental domains of the AEDC provide an example of a milestone model that may be further adapted, and include: physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, communication and general knowledge (see

Australian Early Development Census, 2017). The aim is to consolidate these broader measures as equal in importance when compared to a current over reliance on very narrow measures of educational outcomes. Currently, this includes NAPLAN and the NSW Higher School Certificate, as sole indicators of schooling success. A research program will also include the economic cost benefits of the interconnected support processes over the long-term.

Finally, instituting a highly skilled health nurse in a coordinating and mediating role within disadvantaged school communities should be developed and embedded in similar disadvantaged communities. The key function of the role is to mediate and support families within the bounds of a public high school and its drawing area as described, from the prenatal stage at community centres to pre-schools (often adapting some existing programs that are currently unattainable for many families) and through to the end of schooling. The role also includes assisting the development of health records in conjunction with learning data (or learning milestones), which travel with the child throughout their schooling years.

The next series of implications provide further support to the objective and direction of the first implication, and further elaboration and connections to the objectives and outcomes of this thesis and in support of disadvantaged urban communities.

8.4.2 Implication 2: Whole person wellbeing as an equal partner in learning.

A strong theme emerging from my thesis has been the need for a stronger alignment or connection between the articulation of our national schooling purposes and consequent action and outcomes (MD). This implication emerging from my thesis builds on the notion of advocacy as the most expedient and essential way to invoke the various layers of responsibility about the delivery of broad educational policy implementation. For all communities, particularly poor communities, it is essential that all its citizens meet national

and international charters regarding the quality of life of young people (UNICEF Australia, 2018).

The various levels of responsibility for implementation are best represented as the macro (system structures), meso (family, community, schools) and micro (individual) levels (Raffo et al., 2009). However, it is often the case that these levels of responsibility are not in balance and for schools, there is increasing responsibility for implementation, outcomes and accountability without the surrounding support. While there are system structures (the meso level) that have failed to deliver integrated support to communities in Australia, Wales has set a precedent and example by enshrining in legislation the 'Future Generations Bill', which sets out the society it seeks to have by 2050—one with a high quality of life enacted through clear strategies (Welsh Government, 2015). The key focus is on addressing inequalities, including physical health, obesity and mental health, together with climate change and poverty. Similarly, New Zealand has developed and recently enacted a 'Living Standards Framework' with a focus on wellbeing and happiness (New Zealand Treasury, 2018).

The binding nature of the Welsh initiative provides a worthwhile model for Australia to enact its commitments through action. South Australia has also recognised the advantages of a coordinated strategy – through its 'schools as community hubs' discussion paper – and recognises the need for all sectors to work together (South Australia, 2013). Advocacy requires key supporters of the proposed interconnected community model to work together, and may include for example, local and state government personnel, philanthropic support, university links, school leaders and key members of community groups to assist in the implementation of whole person wellbeing strategies. Assisting the modelling concept and advocacy includes progress in Aboriginal health where constructs of traditional holistic methods are utilised (Sherwood & Edwards, 2006).

The task of advocacy is an important component to promoting and embedding the whole person construct within the system layer and requires considerable effort and time. Findings from 'Study 2' of my thesis provides an opportunity for early consideration. The link between emotion (EI) and academic achievement showed a strong association. Dewey was an early advocate of the notion of learning embraced within a person's sense of self and their emotions (Dewey, 1897), and neuroscience is providing powerful evidence of the connection (Immordino-Yang, 2011). Consideration should be given to building on this work through enhancing the relationship between emotional, mental and spiritual wellbeing as equal partners in school community's responsibility in supporting young people (a link to these elements in the MD). This can be undertaken through the integration of concepts in all subject programs, across the school more broadly in the supportive role that schools undertake, and through strong links with broad community cultural groups and agencies. My study also noted poor results in physical outcomes for young people (CRF), and extracurricular physical activity is one of many opportunities to consider, with the potential to not only assist levels of fitness but impact on a range of social and psychological elements (Belton, Prior, Wickel, & Woods, 2017).

8.4.3 Implication 3: Purpose, equity and national education plan.

This thesis has highlighted the breakdown between purpose, as espoused through national documents such as the MD, and implementation of many of the commitments. Over the course of the last number of national declarations in which equity and social justice are stated, the structure of schooling in Australia has become increasingly one of the most segregated in the OECD (PISA, 2017). It is proposed that the purposes of schooling as articulated in the national declarations require considerable adjustment at the various points of design, construction and delivery. Complex and broad statements, expectations and commitments serve little purpose if they are not connected to effective and broad

consultation, authentic action plans across states and territories, the provision of planned and genuine support mechanisms, and research and accountability at the system level. Moreover, as demonstrated in my thesis, planning and actions should always enable communities by placing them at the centre, rather than weighted heavily to bureaucratically conceived ideals and narrow forms of measurement.

Study 3 in my thesis highlighted the importance of schools as integral to their community identity. The structure of schooling in Australia – NSW in particular – should be considered in its modelling through the prism of the community. Schools, as they evolve, will become more the centre or hub within their communities, as they often are in regional areas, and therefore as they should in urban environments. As such, young people shouldn't be encouraged to travel great distances to schools that are perceived to be better, based on how they are marketed or their level of SES. Within the interconnected community model proposed, young people and their families are integral to their communities. That requires each public school to be considered as critical to that model, and supported as central to that concept without having students taken away and diminishing the quality and life of the community.

A national declaration should be a binding and holistic commitment with an interdisciplinary focus that brings together agencies, research and support structures with accountabilities that are publicly driven and annually reported. The next iteration of national goals for schooling should be reviewed mindful that it includes the voice of the people it is meant to serve. Measurement of success requires both qualitative and quantitative forms, and research considered about a broader set of measures that embrace the full spectrum of commitments (see Kanji & Chopra, 2007; Nussbaum, 2003).

8.4.4 Implication 4: Interdisciplinary longitudinal research

Longitudinal mixed methods research will support consistent evaluation and the means to refining implementation. It is also strongly suggested that research should be inter-disciplinary. As a nation we seek to ensure all students are successful and have equal opportunities in meeting our stated goals. It is critical that underlying inequality is addressed. The nation benefits in terms of increased economic prosperity, through improved health and educational gains (McLachlan et al., 2013). Research should not be misused for particular political agendas, for example, debate regarding in-school factors and therefore teacher and teacher quality, versus out-of-school factors affecting educational outcomes (see Thompson et al., 2012).

The research should take the form of an integrative approach, so that there is a connection of each of the wellbeing elements (Harris, 2010). For example, Harris (2010, p. 1) strongly advocates interdisciplinary research through population science, where, she argues, the inherent transdisciplinary nature of this area highlights health disparities among the young 'as both causes and consequences of social stratification'. Data for this and other studies were derived from (US) national longitudinal analyses at multiple stages of the life course. Such investigations of how SES pathways from childhood into adulthood are associated with biophysiological outcomes, provide valuable information about effective times or stages during adolescents for appropriate interventions (Yang, Gerken, Schorpp, Boen, & Harris, 2017).

Using the same data, a large study was undertaken on the genetic architecture of educational attainment, in which researchers tested the genetic predisposition of siblings to educational attainment using polygenic scores (small genes that together produce observable variation), and showed that sibling participants with higher (polygenic) scores typically went on to complete more years of schooling than lower-scoring sibling (Domingue, Belsky,

Conley, Harris, & Boardman, 2015). Transdisciplinary studies form the basis of what Harris (2010) calls 'putting the pieces together in an integrative [way]'.

Similarly in Australia, innovative research involving data compiled from various sources has been used to predict early risk in childhood of the onset of mental illness (Green et al., 2017). Data was sourced from intergenerational records collected from government departments of health, education, justice and child protection, which were linked with the AEDC to detect the early emergence of childhood risk for adult mental disorders. Similar Australian research of the emergence of child mental health risk factors was undertaken with a two age cohort cross-sequential design (Guy, Furber, Leach, & Segal, 2016; Lawrence, Johnson, & Hafekost, 2015). This exciting research provides great potential to address concerns very early in children's lives, to intersect with educational professionals, and to expand our collective understanding of ways to better assist all students, and especially students from disadvantaged communities.

8.5 Concluding remarks

The primary aim of this thesis was to investigate the extensive and complex barriers that influence effective educational outcomes in poor high school communities. In considering how outcomes might be improved, I focused on the relationship between school purpose and a coordinated whole person approach to schooling. Each of the three studies highlighted a range of concerning outcomes for young people in a group of four schools in a disadvantaged suburb of Sydney, and the challenges for the schools assisting them, while also suggesting strategies that are drawn from the implications of my thesis.

The thesis began with the story of Mount Druitt High School, and the front-page headline in *The Daily Telegraph*, 'The year we failed'. These graduating Year 12 students, caught in an ongoing narrative about a disadvantaged community in the outer fringe of Sydney's western suburbs, set the scene for the examination of the barriers in this thesis.

These young men and woman will be soon approaching their 40th birthday, and it is hoped that they have each successfully taken on their professional and personal lives successfully.

Identified barriers were divided into two categories; namely, barriers related to human circumstances and those relating to schooling structures. Mount Druitt did not represent a failure of students, as the headline implied, but a failure of many circumstances that, together, represent similar communities around Australia that have been left in the wake of what I have summarised as a disconnection between what is espoused by governments, bureaucrats and policy-makers, and what is often poorly implemented.

While the disconnections are numerous, there are ways the barriers for school communities should and can be overcome. The four implications noted above address a common theme, which includes a desire for greater continuity between planning, and the ultimate support for young people that takes place in schools. As various scholars have observed, connected community centres or hubs are more likely to provide the foundation for success into the future, before there are the sweeping policy reforms that would need to be enacted by currently intransigent national governments and policy-makers. Such reforms however, are urgently required along with government support to ensure the success of generations of young Australians, and the future of Australian society.

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Appendices

Appendix 1: Ethics approval (Department of Education and Communities)

NSW GOVERNMENT | Education & Communities

Dr Wendy Miller (Elsworth)
HA 101 Hunter Building University of Newcastle
CALLAGHAN NSW 2308

DOC 11/208810

Dear Dr Miller (Elsworth) SERAP Number **2011112**

I refer to your application to conduct a research project in New South Wales government schools entitled *A longitudinal examination of the factors associated with educational outcomes among adolescents.*. I am pleased to inform you that your application has been approved. You may now contact the Principals of the nominated schools to seek their participation. **You should include a copy of this letter with the documents you send to schools.**

This approval will remain valid until 27-05-2012.

The following researchers or research assistants have fulfilled the Working with Children screening requirements to interact with or observe children for the purposes of this research for the period indicated:

Name	Approval expires
David Revalds Lubans	06/09/2012
Edward Anthony Noon	23/09/2012
Wendy Anne Elsworth Miller	06/09/2012

I draw your attention to the following requirements for all researchers in New South Wales government schools:

- School Principals have the right to withdraw the school from the study at any time. The approval of the Principal for the specific method of gathering information for the school must also be sought.
- The privacy of the school and the students is to be protected.
- The participation of teachers and students must be voluntary and must be at the school's convenience.
- Any proposal to publish the outcomes of the study should be discussed with the Research Approvals Officer before publication proceeds.

When your study is completed please forward your report marked to Manager, Schooling Research, Department of Education and Training, Locked Bag 53, Darlinghurst, NSW 2010.

Yours sincerely

Bill Tomlin
R/Senior Manager
Student Engagement and Program Evaluation
27 September 2011

Student Engagement and Program Evaluation Bureau NSW Department of Education and Communities
Level 3, 1 Oxford Street, Darlinghurst NSW 2010 – Locked Bag 53, Darlinghurst NSW 1300 Telephone: 02 9244 5619– Fax: 02 9266 8233 – Email: serap@det.nsw.edu.au

Appendix 2: Ethics approval (University of Newcastle)

HUMAN RESEARCH ETHICS COMMITTEE

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Notification of Expedited Approval

To Chief Investigator or Project Supervisor:	**Doctor Nicole Mockler**
Cc Co-investigators / Research Students:	**Associate Professor David Lubans** **Professor Jennifer Gore** **Mr Edward Noon**
Re Protocol:	**A longitudinal examination of the factors associated with educational outcomes among adolescents.**
Date:	**07-Oct-2014**
Reference No:	**H-2011-0079**

Thank you for your **Variation** submission to the Human Research Ethics Committee (HREC) seeking approval in relation to a variation to the above protocol.

Variation to:

1. Reactivate expired protocol
2. Change the Chief Investigator to Nicole Mockler

Your submission was considered under **Expedited** review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is **Approved** effective **02-Oct-2014**.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal *Certificate of Approval* will be available upon request.

Professor Allyson Holbrook
Chair, Human Research Ethics Committee

For communications and enquiries:
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Linked University of Newcastle administered funding:

Funding body	Funding project title	First named investigator	Grant Ref

Appendix 3: Principal Information Letter

Dr Wendy Miller
School of Education
Faculty of Education and Arts
University of Newcastle
Callaghan NSW 2308
Phone: + 61 (0)2 4921 6736
Fax: +61 (0)2 4921 6020
Email: wendy.miller@newcastle.edu.au

Information Statement for the Research Project:
A longitudinal examination of the factors associated with educational outcomes among adolescents.
Document Version 4: dated 24 August 2011

Dear Principal,

Your school is invited to participate in the research project identified above which is part of Ted Noon's PhD studies at the University of Newcastle, supervised by Dr Wendy Miller and A/Prof David Lubans from the School of Education.

Why is this research being done?

The purpose of this research is to examine the longitudinal relationship between academic achievement and the following potential determinants: physical fitness and participation in physical activity, physical self-perception, social and emotional intelligence and students' perceptions of their school environment. Previous research has shown that these individual factors are associated with student achievement, but no prior research has attempted to examine the ways in which schools might improve student achievement through a combined whole-child approach to education.

Who can participate in this research?

We are seeking the participation of the full cohort of 2012 Year 7 students from four high schools in the South-Western Sydney region.

What choice do you have?

Participation in this research is entirely your choice and only schools where principals have provided their explicit consent will be included in the study. If you do agree to your school's participation, you may withdraw from the study at any time without giving a reason. A decision not to participate or discontinuation of involvement in the study will not jeopardise your relationship with the University of Newcastle. Similarly, students in your school will be included in the study only after a consent form has been signed by the students and their parents/guardians. If students and parents/guardians initially agree to participate, they can choose to withdraw from the study at any time without giving a reason. Students who choose not to participate in the research assessments will be placed in an alternative school program as arranged with the school.

What would you and your students be asked to do?

If you agree to participate in the study, students from your school will be asked to complete the following assessments in 2012, and then again in 2014: physical activity questionnaire, standing long jump for muscular fitness, 20 metre shuttle run for cardiorespiratory fitness, survey of students' views of school (Quality of School Life), survey of students' ability to deal with emotions (emotional intelligence) physical self-perception questionnaire and test of general ability over time (AGAT). In addition, we request that schools provide students' National Assessment Program - Literacy and Numeracy (NAPLAN) results to the research team. This will be organised in conjunction with the NSW Department of Education and Training where the data will be de-identified.

We propose that the physical activity tests be undertaken during normal PE lessons, and negotiate to complete all other assessments during an agreeable time, eg Welfare/Pastoral Care period. For students who are not participating, we will negotiate an alternative educational activity commensurate with the school's program.

We envisage that assessments other than the physical activity test will take approximately an hour and a half to complete and organised in such a way as not to interfere with curriculum imperatives.

In cases where students are unable to participate because of eg a disability that may prevent a physical activity assessment, we will attempt to provide an alternative measure or if unable to provide an alternative exclude the student from that particular assessment and arrange an alternative school related program.

We would also like to interview you as the principal, with questions related to factors associated with educational outcomes. If you agree we would like to record the interview. Following the interview and once transcribed, you will have an opportunity to review and edit the recording (See protection of data below).

What are the risks and benefits of participating?

Based on previous studies, students will have no greater chance of injury by participating in these assessments in comparison to their usual physical education classes. In instances where there are questions related to students' emotional status, eg the "Quality of School Life" survey, students will be reminded of the availability of the school's welfare support programs and personnel. It is hoped that the school, students and staff involved will benefit from the results of the research, providing an opportunity to reflect on the findings for your school which can assist school planning.

How will privacy be protected?

Any personal information provided by you, students and parents will be confidential to the researchers. Once the data has been collected, it will be de-identified using alpha-numeric participant codes, entered into an electronic data file, and the originals of all questionnaires and other data collection sheets will be destroyed. Data files will be retained for at least 5 years in a password protected electronic folder on a research drive at the University of Newcastle, accessible only by Mr Noon and his supervisors. The results of the study will be published in general terms and will not allow the identification of individual students or schools.

How will the information collected be used?

The data collected from this study will be reported in a thesis to be submitted for Mr Noon's PhD. It is anticipated that the data will also be reported in journal publications and conference presentations to inform future practice with a particular focus on a whole-child approach to education. Individual participants will not be identified in any reports arising from the project. A summary of the results of this research will be provided to the Department of Education and Communities and all participating schools.

What do you need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact one of the researchers. If you are willing for your school to participate in this study, please complete the accompanying Consent Form and return it to the researchers in the reply paid envelope provided.

Upon receipt of your consent, Ted Noon will contact you to organise a time to visit the school and provide you with information about the study and to organise a schedule for the research processes outlined above to be undertaken. Information letters and consent forms will need to be distributed to all 2012 Year 7 students to ensure students and their parents/guardians have provided active consent before any data from students is collected.

Further information

If you would like further information please do not hesitate to contact Mr Ted Noon, Dr Wendy Miller or A/Prof David Lubans, using the contact details provided below. Thank you for considering this invitation.

Regards,

Dr Wendy Miller
School of Education
Faculty of Education & Arts
The University of Newcastle
Phone: (02) 4921 6736
wendy.miller@newcastle.edu.au

A/Prof David Lubans
School of Education
Faculty of Education & Arts
The University of Newcastle
Phone: (02) 4921 2049
david.lubans@newcastle.edu.au

Mr Ted Noon
PhD Candidate
School of Education
Faculty of Education & Arts
The University of Newcastle
edward.noon@uon.edu.au

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0079 and the NSW DET SERAP Approval number 2011112. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02 49216333), email Human-Ethics@newcastle.edu.au

Appendix 4: Principals Consent

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Email: wendy.miller@newcastle.edu.au

PRINCIPAL CONSENT FORM

Document Version 4: dated 24 August 2011

Chief Investigators: Mr. Ted Noon, Dr. Wendy Miller, A/Prof David Lubans

I have been given information about the project identified above. I understand that if I consent to my school's involvement in this project, consenting students will participate in the study entitled: *A longitudinal examination of the factors associated with educational outcomes among adolescents* over the period 2012 – 2014. I understand that there will be two periods in which data will be collected form students – all consenting Year 7 (2012) students, and these same students using the same assessments in 2014.

I understand that consenting students will also complete the following assessments: physical activity questionnaire, standing long jump for muscular fitness, 20 metre shuttle run for cardiorespiratory fitness, survey of students' views of school (Quality of School Life), survey of students' ability to deal with emotions (emotional intelligence) physical self-perception questionnaire and test of general ability over time (AGAT). In addition, I understand that we will request that schools provide students' National Assessment Program - Literacy and Numeracy (NAPLAN) results to the research team, and that this will be organised in conjunction with the NSW Department of Education and Training.

The physical activity tests can be completed during PE lessons, and we envisage the other assessments will take approximately an hour and a half to complete, organised at a mutually agreeable time so as not to interfere with classroom learning.
I understand that any personal information provided by me and the students will be confidential to the researchers, and that the identity of all students and participants is withdrawn and replaced by a code.

I have had an opportunity to ask the researchers, Mr. Ted Noon, Dr. Wendy Miller and A/Prof. David Lubans questions about the research. I understand that my school's participation in this research is voluntary and that my school and my students are free to withdraw from the research project at any time. My refusal to participate or withdrawal of consent will not affect my relationship with the University of Newcastle.

I understand that all collected student data including NAPLAN will be de-identified using alpha-numeric participant codes, and any personal information provided by you, students and parents will be confidential to the researchers.

By signing below I am indicating my consent for my school to participate in this research project conducted by Mr. Ted Noon. I am also consenting for the provision of time to talk to both you as the Principal and to the PDHPE staff. I am also indicating my consent for my school to enable time to be organised for the Year 7 students to complete both the physical activity assessments during PDHPE lessons, and the survey/questionnaires at a time and space to be arranged. I am also indicating my consent for student NAPLAN results to be collected from the NSW Department of Education and Training according to their protocols. I am also indicating my consent for my school to participate in the abovementioned student assessments as part of the research on two occasions – 2012 and 2014.

Name of school: _____Principal's name: _____

Signature: _____ Date: _____

PLEASE FAX OR EMAIL COMPLETED SHEET BACK ASAP TO Dr Wendy Miller – FAX. No. 49216020 OR wendy.miller@newcastle.edu.au

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0079 and the NSW DET SERAP Approval number 2011112. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02 49216333), email Human-Ethics@newcastle.edu.au

Appendix 5: Parent Information Letter

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Information Statement for the Research Project:
A longitudinal examination of the factors associated with educational outcomes among adolescents.
Document Version 4: dated 24 August 2011

Dear Parent or Caregiver,

Your school and your child have been invited to participate in the research project identified above which is part of Mr Ted Noon's PhD studies at the University of Newcastle, supervised by Dr Wendy Miller and A/Prof David Lubans from the School of Education.

We ask that you discuss the research with your child in order that they understand what is involved, supported by reading the following information and also your child taking the opportunity to ask questions during the explanation of the research project at school.

Why is this research being done?
We are trying to find out more about the relationship between: (a) the physical, socio- cultural, emotional-spiritual and cognitive-academic elements of adolescents (which combined is referred to as a "whole-child" approach, and (b) the educational outcomes of students in diverse school contexts. Previous research has shown that there is a positive relationship between each of these elements and student achievement, but no prior research has attempted to examine the ways in which schools might improve student achievement through a combined whole-child approach to education.

Who can participate in this research?
We are seeking the participation of the full cohort of 2012 Year 7 students from four high schools in the South-Western Sydney region.

What choice do you have?

The school principal has agreed to your child's school being involved in the study. However participation in the study is entirely you and your child's choice. If your child agrees to participate you can choose to discontinue participation in the assessments at any time.

If you or your child change your mind about taking part, even after the study has started, just let the researcher know and any information already collected about your child will be destroyed. If you choose to withdraw from the program, your child will be provided with an alternative activity during lesson time. A decision not to participate or discontinuation of involvement in the study will not harm your relationship with the school. Withdrawal from this task will not result in any disciplinary action, nor will it affect your child's academic grades, given that this is a purely voluntary research task.

What would the students be asked to do?

If you agree to participate in the study, students from your child's school will be asked to complete the following assessments in 2012, and then again in 2014: physical activity questionnaire, standing long jump for muscular fitness, 20 metre shuttle run for cardiorespiratory fitness, survey of students' views of school (Quality of School Life), survey of students' ability to deal with emotions (emotional intelligence) physical self-perception questionnaire and test of general ability over time (AGAT). In addition, we request that schools provide students' National Assessment Program - Literacy and Numeracy (NAPLAN) results to the research team. This will be organised in conjunction with the NSW Department of Education and Training where the data will be have student names removed.

We propose that the physical activity tests be undertaken during normal PE lessons, and negotiate to complete all other assessments during an agreeable time, eg Welfare/Pastoral Care period. For students who are not participating, we will negotiate an alternative activity that is in line with the school's educational programs.

We think that assessments other than the physical activity test will take approximately an hour and a half to complete and organised in such a way as not to interfere with the normal curriculum.

In cases where students are unable to participate because of eg a disability that may prevent a physical activity test, we will attempt to provide an alternative measure or if unable to provide an alternative exclude the student from that particular assessment. The student may assist the class in other ways in order to be part of the program.

What are the risks and benefits of participating?

Based on previous studies, students will have no greater chance of injury by participating in these assessments in comparison to their usual physical education classes. In instances where there are questions related to students' emotions, eg the "Quality of School Life" survey, students will be reminded of the availability of the school's welfare support programs and personnel. It is hoped that the school, students and staff involved will benefit from the results of the research, providing an opportunity to assist future school planning.

How will privacy be protected?

Any personal information provided by students and parents will be confidential to the researchers. Once the data has been collected, the names of students will be replaced by codes. This information will then be entered into an electronic data file, and the originals of all questionnaires and other data collection sheets will be destroyed. Data files will be kept for at least 5 years in a password protected electronic folder on a research drive at the University of Newcastle, with access only by Mr Noon and his supervisors. The results of the study will be published in general terms and will not include the names of individual students or schools.

How will the information collected be used?

The data collected from this study will be reported in a thesis to be submitted for Mr Noon's PhD. It is anticipated that the data will also be reported in journal publications and conference presentations to inform future practice with a particular focus on a whole-child approach to education. Individual participants will not be identified in any reports arising from the project. A summary of the results of this research will be provided to all participating schools.

What do you need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate. We advise that you discuss the research with your child. If there is anything you do not understand, or you have questions, please contact one of the researchers. If you are willing to participate in this study, you and your parent(s) will need to complete the accompanying consent forms and return it to the school's office or your roll-class teacher as soon as possible.

Further information

Following the completion of the study, the school will be sent a report describing the findings of the study. Results will be published in a summary form to study participants and their parents. Individual results will not be given to students.

If you would like further information please do not hesitate to contact Mr Ted Noon, Dr Wendy Miller or A/Prof David Lubans. Thank you for considering this invitation.

Regards,

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Mr Ted Noon
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Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0079 and the NSW DET SERAP Approval number 2011112. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02 49216333), email Human-Ethics@newcastle.edu.au

Appendix 6: Parent Consent

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RESEARCH PROJECT

PARENT CONSENT FORM

Document Version 4: dated 24 August 2011

I have been given information about the project identified above, which is being conducted at your child's school by Mr Ted Noon, a PhD research candidate from the University of Newcastle. The principal supervisor is Dr Wendy Miller from the University of Newcastle and A/Prof David Lubans from the University of Newcastle.

I understand that if I consent to my child's involvement, he/she will participate in the study entitled: *A longitudinal examination of the factors associated with educational outcomes among adolescents.*

I understand that the study will aim to involve all the children in the Year 7 (2012) cohort so long as you indicate consent for your child to participate. I understand that the study aims to develop a better understanding of the nature of the support for the way in which educational outcomes for students in high school communities may be improved through an integrated whole-child model of learning.

I understand that my child will participate in the following assessments in 2012, and again in 2014 as part of the longitudinal study: A physical activity questionnaire, physical activity assessments including explosive leg strength and cardiorespiratory fitness (20-m shuttle run), a survey of students' views of school, a survey of students' ability to deal with emotions (emotional intelligence), a physical self-perception assessment, a test of general ability over time (AGAT). I also agree for my child's NAPLAN results to be provided by the NSW DEC (Formerly NSW DET) to the research team.

The physical activity tests can be completed during PE lessons, and we envisage the other assessments will take approximately an hour and a half to complete, organised at a mutually agreeable time so as not to interfere with classroom learning.

I understand that any personal information provided by students will be confidential to the researchers, and that the identity of students is withdrawn and replaced by a code.

I have spoken to my child about the research. I have had an opportunity if required to ask Mr Ted Noon questions about the research. I understand that my child's participation in this research is voluntary and he/she is free to withdraw from the research project at any time. His/her refusal to participate or withdraw

consent will not affect his/her relationship with the University of Newcastle or the school. Withdrawal from this task will not result in any disciplinary action against my child, nor will it affect his/her academic grades, given that this is a purely voluntary research task.

By signing below I am indicating consent for my child to participate in this research project conducted by Mr Ted Noon, as it has been described to us in the Information Statement, a copy of which I have retained.

Student name: _____

Parent/guardian name: _____

Signature: _____ **Date:** _____

Please sign the completed consent letter and return to the school's office or your child's roll call teacher

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0079 and the NSW DET SERAP Approval number 2011112. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02 49216333), email Human-Ethics@newcastle.edu.au

Appendix 7: School Life Student Questionnaire Secondary (QSL)

Appendix 4

ACER Always print survey back to back for scanning

SCHOOL LIFE STUDENT QUESTIONNAIRE: SECONDARY

We would like to know how you feel about your life in secondary school. ***This is not a test****, and there are no right or wrong answers. What we want is your opinion, so try to answer what you think about your school life. Your answers will not be seen by anyone else.*

First of all, would you please answer these questions: Fill the correct circle like this ●

Name of Your School? _____

Your ***Year*** *level ?* ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ *Boy* ○ *or Girl* ○

Each statement on the next two pages starts with MY SCHOOL IS A PLACE WHERE ... some particular thing happens to you or you feel a particular way. You should give your opinion by ***filling in*** *one of the circles in each line to show that you* ***Agree****,* ***Mostly Agree****,* ***Mostly Disagree*** *or* ***Disagree*** *with the statement.*

Try to give an answer to every statement but, if you really cannot decide, leave that one out.

Don't forget that you have to think of ***My School is a Place Where...*** *before each item for it to make sense, for example,* ***My School is a Place Where ... I feel important****.*

MY SCHOOL IS A PLACE WHERE	*(**fill in** one circle in each line)* Definitely Agree	Mostly Agree	Mostly Disagree	Definitely Disagree
1. teachers treat me fairly in class.	○	○	○	○
2. I feel proud to be a student.	○	○	○	○
3. the things I learn are important to me.	○	○	○	○
4. people look up to me.	○	○	○	○
5. I feel depressed.	○	○	○	○
6. I feel it is easy to get to know other people.	○	○	○	○
7. I really get involved in my school work.	○	○	○	○
8. I like learning.	○	○	○	○
9. I get enjoyment from being there.	○	○	○	○
10. other students are very friendly.	○	○	○	○
11. I feel restless.	○	○	○	○
12. teachers give me the marks I deserve.	○	○	○	○
13. I have acquired skills that will be of use to me when I leave school.	○	○	○	○
14. I always achieve a satisfactory standard in my work.	○	○	○	○
15. other people care what I think.	○	○	○	○
16. teachers take a personal interest in helping me with my work	○	○	○	○

Appendix 4

Always print survey back to back for scanning

*(**Fill in** one circle in each line)*

MY SCHOOL IS A PLACE WHERE ...	Definitely Agree	Mostly Agree	Mostly Disagree	Definitely Disagree
17. I am treated with respect by other students.	○	○	○	○
18. mixing with other people helps me understand myself.	○	○	○	○
19. I feel lonely.	○	○	○	○
20. the things I learn will help me in my adult life.	○	○	○	○
21. I know people think a lot of me.	○	○	○	○
22. I know how to cope with the work.	○	○	○	○
23. teachers help me to do my best.	○	○	○	○
24. I get upset.	○	○	○	○
25. I am given the chance to do work that really interests me.	○	○	○	○
26. I know I can do well enough to be successful.	○	○	○	○
27. the things I am taught are worth learning.	○	○	○	○
28. I feel important.	○	○	○	○
29. teachers are fair and just.	○	○	○	○
30. I am a success as a student.	○	○	○	○
31. I really like to go each day.	○	○	○	○
32. I learn to get along with other people.	○	○	○	○
33. I feel worried.	○	○	○	○
34. the work I do is good preparation for my future.	○	○	○	○
35. I feel proud of myself.	○	○	○	○
36. other students accept me as I am.	○	○	○	○
37. I have learnt to work hard.	○	○	○	○
38. I get on well with the other students.	○	○	○	○
39. I find learning is a lot of fun.	○	○	○	○
40. teachers listen to what I say.	○	○	○	○
Optional questions				
1. [ ]	○	○	○	○
2. [ ]	○	○	○	○
3. [ ]	○	○	○	○
4. [ ]	○	○	○	○

Appendix 8: Swinburne University Emotional Intelligence Test (A-SUEIT)

52151

SWINBURNE UNIVERSITY OF TECHNOLOGY

Adolescent SUEIT™

Swinburne University Emotional Intelligence Test

Adolescent Self-Report Version By

Ben Palmer, Con Stough and Stefan Luebbers
Centre for Neuropsychology
Swinburne University of Technology

52151

Adolescent SUEIT™ Swinburne University Emotional Intelligence Test

Adolescent Self-Report Version

Instructions

There are no right and wrong ways to feel in any one given situation, however, there are more and less effective ways of dealing with emotions. The Adolescent Version of the SUEIT has been designed to assess how effectively individuals deal with emotions. It contains a series of statements for which there are no right and wrong answers. Rather, your responses to the statements should indicate the way you typically deal with emotions.

The most accurate assessment is gained from people who respond to the statements honestly. Therefore it is essential that you are truthful about yourself, and that you do not answer in a way that you think sounds good or acceptable. In general, try not to spend too long thinking about responses. Most often the first answer that occurs to you is the most accurate. Below is an example.

Q. I am aware of my moods and emotions.

You are required to indicate on the response scale, how accurate the statement is of the way you **typically** think, feel or act. There are five possible responses to each statement (shown below). You are required to fill in the circle containing the number that corresponds to your answer where.....

1 = Very Seldom
2 = Seldom
3 = Sometimes
4 = Often
5 = Very Often

When considering a response, it is important not to think of the way you thought, felt, or acted in any one situation, rather how you typically think, feel or act. If you feel a statement does not apply to you, choose a response that gives the best indication of how you think you would typically think, feel or act. Some of the statements may not give all the information you would like to receive. If this is the case, please choose a response that seems the best even if you are not sure. There is no time limit to the test, however it should take between 15-20 minutes to complete. Thank you for taking the time to complete the Adolescent Swinburne University Emotional Intelligence Test.

52151

SWINBURNE UNIVERSITY OF TECHNOLOGY

Adolescent SUEIT™ Swinburne University Emotional Intelligence Test

Adolescent Self-Report Version

Shade Circles Like This--> ●
Not Like This--> ⊗ ✓

Please answer each question on this form. Print information in the boxes provided. Please answer questions with 'bubbles' by completely filling in the bubble that corresponds with your answer.

Name (please print clearly)

Age (yrs): | | |

Gender: ○ Male
○ Female

Level of Education:

○ Completing Year 7
○ Completing Year 8
○ Completing Year 9
○ Completing Year 10
○ Completing Year 11
○ Completing Year 12

Cultural and Ethnic Background

○ Oceanian (Australian, New Zealand, Melanesian, Micronesian, Polynesian)
○ North-West European (British, Irish, Western European, Northern European)
○ Southern and Eastern European (Southern European, South Eastern European, Eastern European)
○ North African and Middle Eastern (Arab, Jewish, Other North African and Middle Eastern)
○ South-East Asian (Mainland South-East, Maritime South-East Asian)
○ North-East Asian (Chinese Asian, Other North-East Asian)
○ Southern and Central Asian (Southern Asian, Central Asian)
○ People of the Americas (North American, South American, Central American, Caribbean Islander)
○ Sub-Saharan African (Central and West African, Southern and East African)

Appendix 5

52151

SWINBURNE UNIVERSITY OF TECHNOLOGY

Adolescent SUEIT™ Swinburne University Emotional Intelligence Test

Adolescent Self-Report Version

Below are the series of statements, please fill in the circle containing the number that is most common of the way you **typically** think, feel and act.

If you make a mistake simply cross it out and fill in the correct response!

Shade Circles Like This--> ●

Not Like This--> ⊗ ⊘

	1 Very Seldom	2 Seldom	3 Sometimes	4 Often	5 Very Often
1. I can tell how others are feeling.	○	○	○	○	○
2. I try to make myself feel happy to get over being stressed or frustrated.	○	○	○	○	○
3. I use my 'gut feelings' when I try to solve problems.	○	○	○	○	○
4. I can still stay focussed when I get worried.	○	○	○	○	○
5. I can tell if others like each other or not.	○	○	○	○	○
6. When I'm stressed, I get annoyed by people around me.	○	○	○	○	○
7. I find it hard to talk about my feelings to other people.	○	○	○	○	○
8. I find it hard to tell how others are feeling just from their 'body language'.	○	○	○	○	○
9. Difficult situations bring out feelings in me that are hard to deal with.	○	○	○	○	○
10. Others find it easy to tell how I am feeling.	○	○	○	○	○
11. I get stressed-out when I am under a lot of pressure.	○	○	○	○	○
12. I use my feelings to help me find new ideas.	○	○	○	○	○
13. I can tell how others feel by the tone of their voice.	○	○	○	○	○
14. When I get worried, I find it hard to tell other people.	○	○	○	○	○
15. I find it easy to change other people's feelings.	○	○	○	○	○
16. I don't easily pick-up on the 'vibe' of the place I'm in.	○	○	○	○	○
17. I can tell when other people are trying to hide their true feelings.	○	○	○	○	○
18. When I try to solve problems I keep my feelings out of it.	○	○	○	○	○
19. I find it easy to control my anger and calm down.	○	○	○	○	○
20. I can tell others how I feel about things.	○	○	○	○	○
21. I don't think it's a good idea to listen to my feelings when I make a decision.	○	○	○	○	○
22. I find it hard to tell if somebody is upset if they don't say it to me.	○	○	○	○	○
23. I find it hard to get people to 'get along' with each other.	○	○	○	○	○
24. I come-up with new ideas by logic and clear thinking instead of using my moods or feelings.	○	○	○	○	○
25. I find it hard to stay focussed if I'm really excited about something.	○	○	○	○	○
26. I can show people how I am feeling through my 'body language'.	○	○	○	○	○
27. I find it hard to tell how people feel about each other.	○	○	○	○	○
28. I solve my problems using logic and clear thinking instead of feelings.	○	○	○	○	○
29. I find it hard to think clearly when I am worried about something.	○	○	○	○	○
30. I find it hard to say how I feel.	○	○	○	○	○

52151

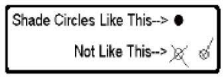
SWINBURNE UNIVERSITY OF TECHNOLOGY

Adolescent SUEIT™ Swinburne University Emotional Intelligence Test

Adolescent Self-Report Version

Below are the series of statements, please fill in the circle containing the number that is most common of the way you **typically** think, feel and act.

If you make a mistake simply cross it out and fill in the correct response!



	Very Seldom	Seldom	Sometimes	Often	Very Often
	①	②	③	④	⑤
31. I find it hard to make others excited about things.	①	②	③	④	⑤
32. I can pick-up on what the 'vibe' is when other people are talking about something.	①	②	③	④	⑤
33. I listen to my feelings when making important decisions.	①	②	③	④	⑤
34. Other people know when I am worried or stressed.	①	②	③	④	⑤
35.When I have upset someone I understand why they are upset with me.	①	②	③	④	⑤
36. I find it hard to calm people down when their worried or stressed.	①	②	③	④	⑤
37. I can still think clearly when I'm upset.	①	②	③	④	⑤
38. I find it hard to let others know that I am worried or stressed.	①	②	③	④	⑤
39. I can tell when another person's feeling or reactions don't 'fit' or make sense with what is happening.	①	②	③	④	⑤
40. I can make my friends relax when they get stressed.	①	②	③	④	⑤
41. The look on other people's faces tells me a lot about the way they are feeling.	①	②	③	④	⑤
42. I find it hard to control really strong emotions.	①	②	③	④	⑤
43. You should stop your feelings from having a big influence over any important decisions.	①	②	③	④	⑤
44. I easily notice the 'feel' or atmosphere of different situations and places.	①	②	③	④	⑤
45. When something gets me down I find it difficult to snap out of it.	①	②	③	④	⑤
46. I trust my feelings when I make important decisions.	①	②	③	④	⑤
47. I am good at knowing what my feelings are.	①	②	③	④	⑤
48. When I talk about something, it is hard to tell if other people feel the same way as me.	①	②	③	④	⑤
49. I can easily 'snap' myself out of feeling down or sad.	①	②	③	④	⑤
50. I can tell when someone feels the same way as me about about other people without talking about it to them.	①	②	③	④	⑤
51. I find it hard to stay 'positive' when I get stressed or worried.	①	②	③	④	⑤
52. When I am upset with someone, I find it hard to tell how they might be feeling.	①	②	③	④	⑤
53. When things go wrong in my life, I find it hard to stay 'positive'.	①	②	③	④	⑤
54. Other people seem to find it easy tell how I feel about things.	①	②	③	④	⑤
55. I try to keep my feelings out of the decisions I make.	①	②	③	④	⑤
56. I can tell when someone doesn't really like me.	①	②	③	④	⑤
57. When someone upsets me, I think about what they said and then usually find a solution.	①	②	③	④	⑤

Appendix 9: Health Nurse Manager. (Draft) Role Statement.

School (Study 1)

Role Statement

Health Nurse manager

Primary purpose of the role

The health nurse manager intervenes, mediates and supports students and families in the school community with an emphasis on undiagnosed or poorly managed health issues. The role is particularly pertinent in disadvantaged school communities. The primary objective is to support schools' responsibility as articulated in the Melbourne Declaration (2008) through the facilitation of human development and as an interdisciplinary approach beginning in the early years. The role provides support for educational outcomes through the enhancement of cognitive functioning (intellectual and academic outcomes), physical, social, emotional, moral and spiritual wellbeing of young people. This is achieved with the support of membership of an interdisciplinary allied health team and learning specialists, through three key strategies: advocate, enable and mediate.

Key accountabilities

- Lead, promote and coordinate primary health care as an integrated learning/health model within the school community.
- Promote, collaborate and coordinate the Health Nurse Manager role within an integrated Allied Health team model
- Lead assessment, identification and management model of primary health care in conjunction with learning specialists.
- Identify, coordinate, connect and liaise with community health and medical providers as a source of specialist support within the school community.
- Assess, lead and coordinate care delivery for students and families as identified through learning and health indicators.
- Participate and document student and family care as part of an integrated model of student learning and health support according to the proactive care model (pre-school to end-of-school).
- Provide support for the school community that enables sound early intervention and education about best practice for ongoing proactive health and learning into adulthood.
- Support evaluation of the program through promotion and expansion of the role, longitudinal interdisciplinary research and connection to disadvantaged community networks.
- Support teacher, student and community knowledge and understanding regarding the health and wellbeing and the link to learning, with involvement through active participation in curriculum and teaching and learning programs and delivery.

Key challenges related to the role

The key challenges in developing and promoting the role include: School Health Nurse Manager (SHNM) requires an experienced primary health care (PHC) background. Additional requirements include high-level interest in training about schools – and how that intersects with health outcomes – including with learning specialist teams in the form of an understanding of, for example, learning milestones (such as AEDI milestones) and how they may be linked to health indicators. This union supports the relationship between the critical elements of educational outcomes that embraces, for example, the link between the intellectual, the physical, social, emotional, spiritual, moral and aesthetic wellbeing of young people. The role also requires a desire to embrace innovation as part of an allied health team working with learning specialist teachers to assist student educational outcomes.

The role therefore requires high-level interest, passion and professional competencies in order to fulfil the role. Personal, interpersonal, strategic, organisational and education/health domains of competency require the SHNM to be a very experienced PHC practitioner prepared to be trained in the combined role and to embrace its interconnected philosophy. Critically, the role also requires practitioners to be strongly committed to the ethos and vision of the school community in which they work, as evidence shows that many families in disadvantaged communities need to build trust in order to commit short- and long-term to the outcomes of the strategy. The role innovation will also be supported through a network of like practitioners so that continuing collaboration and professional learning can be undertaken.

Who	Why
Internal	
Principal, deputy principal, head teacher Allied Health and head teacher Student Support Services	• Liaise, connect and enable the functionality of the role
Allied Health and learning team members	• Coordination of the interconnection between roles to support continuity of delivery of a holistic approach to student educational outcomes.
Principals, learning support teams of feeder primary schools	• Liaise, connect and enable delivery of Healthy Learner support as a continuum of learning P-12
External	
Health care providers	• Liaise, connect and enable delivery of support across the range of health care providers for students and families.
Primary Health Networks (PHN), Local Area Health services	• Liaise, connect and enable two-way interaction to ensure continuing development of connected services

School Health Nurse network	• Coordination and development of the role, support and professional learning
Interdisciplinary research	• Liaise, connect and assist in supporting longitudinal research through the school/university project
Local School Interconnected Community Centre	• Liaise, connect and assist the development of an Interconnected Community Centre project (coordinated support for families pre-natal to Year 12 high school).

Key relationships

Role dimensions

Decision making

- Referral of students through coordinated health and learning teams.
- Screening leading to referral to local health services.
- Referral leading to liaison, report writing and follow-up to conclusion.
- Reporting and recording on all decisions to the Head Teacher Allied Health, to the Student Support Services and Learning Support teams.

Reporting line

Head teacher, Allied Health in the first instance. The reporting line also links to the head teacher Student Support Services; deputy principal (student wellbeing), under the ultimate direction of the principal.

Direct reports

Direct reports are made to the Head Teacher Allied Health and minutes for cases are recorded in Student Support Services notes.