Australian Council *for* Educational Research

TEACHING AND LEARNING IN MIDDLE SCHOOLING:
A review of the literature

A Report to the
New Zealand Ministry of Education

Stephen Dinham and Ken Rowe

Australian Council for Educational Research

November, 2007

This report provides information in response to a Request for Proposals (July 2007), and in fulfilment of a contract between the Australian Council *for* Educational Research, Limited, and the Ministry of Education, New Zealand. Note that the views expressed in the report are those of the authors and not necessarily those held officially by the New Zealand Ministry of Education, nor by the Australian Council *for* Educational Research.

Specific queries about the contents of this report should be directed to:

Dr Ken Rowe
Research Director,
Learning Processes Research Program
ACER
347 Camberwell Road
Camberwell, VIC 3124, Australia
Tel: +61 3 9835 7489
Fax: +61 3 9835 7433
Email: rowek@acer.edu.au

Professor Stephen Dinham
Research Director,
Teaching & Leadership Research Program
ACER
347 Camberwell Road
Camberwell, VIC 3124, Australia
Tel: +61 3 9835 7463
Fax: +61 3 9835 7433
Email: dinham@acer.edu.au

Preface

This report has been prepared by the Australian Council *for* Educational Research (ACER) under a contract with the New Zealand Ministry of Education. In brief, it contains a review of the literature that focuses on the educational needs and outcomes of students during the middle years of schooling (Years 7 to 10). Thus, the report presents findings based on:

1. the provision of a comprehensive *critical* review of the extant international literature that has attempted to identify 'best practice' in *middle schooling*;
2. the explication of key reform initiatives in middle schooling that are claimed to be 'effective' in maximising the educational progress of middle years students, as well as the pedagogical and resource need of teachers and schools; and
3. an outline of an *evidence-based* framework designed to assess the effectiveness of *middle schooling* in terms of student outcomes and educational provision requirements.

The valued administrative assistance provided by Dr Emma Curtin and Ms Patricia Firth (ACER Administrative Officers) is acknowledged with thanks. Moreover, we owe a significant debt of gratitude to Ms Marion Meiers (ACER Senior Research Fellow) for her valued support, as well as for the quality services provided by staff of ACER's Cunningham Library, and in particular, by Ms Patricia Knight. Without the assistance of these key persons, the present report would not have been possible.

Stephen Dinham and Ken Rowe
Australian Council *for* Educational Research
November, 2007

Contents

Continued

Contents (Cont.)

EXECUTIVE SUMMARY

As a basis for informing the New Zealand Ministry of Education, this report provides a *critical* review of the extant international literature that has attempted to identify 'best practice' in *middle schooling* (i.e., Years 7-10). To this end, key elements of the report may be summarised as follows:

- Following a specification of purposes and objectives for the review in Section 1, the report provides an outline of methods typically employed in such undertakings, including the approach used in the review and its limitations (Section 2). It is noted that in contrast to the voluminous and predominately qualitative nature of the literature on *middle schooling*, there is a serious paucity of quantitative studies employing strong evidence-based methods that have investigated the relative effects of various forms of *middle/non-middle schooling*, thus constituting a major limitation of the present review.
- Drawing on the available literature, Section 3 provides a local/international background and context of the *middle schooling* movement; defines what is meant by *middle years schooling* and *middle schools;* and examines the *middle school* concept, including its development and philosophical underpinnings. It is noted that whereas *middle schooling* might be relatively under-researched, there is no shortage of strong views on the subject, both pro and con. The concern is that writings from advocates for *middle schooling* tend to be little more than aspirational, frequently bordering on mere rhetoric and ideology.
- Section 4 provides an outline and a critique of the literature on the adoption of middle schooling in New Zealand and three other 'like' countries, namely: Australia, United Kingdom, and United States of America. Despite the large volume of published work from Australia, the UK, and especially from the USA, strong evidence-based research *middle schooling* is less than adequate in policy terms, and represents something of a 'black hole'. This phenomenon has been noted by New Zealand's Education Review Office (2003: 1) in the following terms: "New Zealand-based information about educational provisions for students in the middle years of schooling is minimal". The same comment applies to the other three countries.
- Sections 5 and 6 of the report review the literature related to the key 'concerns' of *middle schooling*, and responses to the issues and perceived 'problems' of *middle schooling*. Particular emphasis is given to the need for a specified 'pedagogy' and a 'language for pedagogy' in the middle years – both of which require less emphasis on the social, developmental needs and interests of adolescents, and more on quality teaching and learning provision – informed by findings from strong evidence-based research of the kind produced by New Zealand's *Iterative Best Evidence Synthesis* programme. This is followed in Section 7 by a review of perceived requirements for 'successful' middle school initiatives.
- Concluding remarks are provided in Section 8. It is noted that despite the large and burgeoning literature claiming positive effects of approaches to *middle schooling* that focus on the cognitive, developmental, social and emotional needs of adolescents, evidence to substantiate the claims remain elusive. Rather, it is suggested that emphasis is best directed at building evidence-based pedagogical capacity in school's most valuable resources – teachers. Further, it is argued that whereas prevailing adherence to the moribund philosophies of *biological* and *social determinism* are foremost among several 'barriers' to reform, they are not justified by findings from evidence-based research. So what matters most? – the imperative of *quality teaching* and *learning* provision, supported by *teaching standards* and ongoing teacher professional learning focused on evidence-based teaching practices that are demonstrably effective in maximising students' engagement, learning outcomes and achievement progress.

1.0 OBJECTIVES OF THE REVIEW

1.1 Key Purpose

As stipulated by the New Zealand Ministry of Education, the key purpose of the present review is to conduct:

> *… a critical examination and analysis of the literature, to assess what we know about the impact of teaching and learning during the middle school years (years 7 to 10) on student engagement, achievement and attitudes to learning. The results from this literature review will complement the series of case studies the Ministry of Education will be undertaking looking at innovative and effective curriculum and teaching approaches linked to student outcomes in different middle schooling contexts across the system.*

In critically reviewing the literature, the review attempts to:

- identify the main themes and key findings that emerge from the literature;
- identify essential elements of exemplary strategies and practice that have the potential for improving outcomes for Year 7 to 10 students in New Zealand; and
- identify any gaps in what is known about the impact of teaching and learning during Years 7 to 10 on student engagement, achievement and attitudes to learning.

1.2 Specific Aims

This critical literature review aims to provide the Ministry of Education with a base of evidence for guiding good practice in the development of education for Years 7 to 10 students in New Zealand schools. It is important to stress that *middle schooling* is not just a New Zealand concern and there is now a substantial international literature on the subject from which to draw.[1] However, as the contents of this review indicate, 'hard evidence' for the *efficacy* of middle schools and *middle schooling* is conspicuous by its absence. Indeed, *middle schooling* is a relatively neglected area for research in comparison with the primary/elementary and senior secondary/high school years of education. This is despite rapid growth in the adoption of various forms of *middle schooling* since the 1980s to the extent that advocacy for *middle schooling* has at times pre-empted or ignored evidence for its efficacy. Suffice to say, research into the effects of *middle schooling* practices and approaches has not kept pace with the enthusiasm for, and expansion of, this form of educational provision.

Thus, from the related published work, the review aims to identify relevant literature (post 1990) from New Zealand and overseas, that:

- identify the social and behavioural characteristics of students in this age group in terms of their learning needs;
- identify pedagogies, with particular reference to age-appropriate pedagogies, that have an influence on student engagement, achievement and attitudes to

[1] A website search of 'middle schooling' yielded more than 459,000 listings. Further, a search of the term 'middle school' using *Google Scholar*, and limited to 'scholarly' publications since 1990, retrieved more than 83,300 articles that does not include a burgeoning number of post-graduate dissertations (e.g., Crouch, 2006). Even allowing for overlaps and multiple counting, this is a vast quantity of literature.

learning during Years 7 to 10 (with a view to identify positive and negative pedagogies);

- indicate the effect of curriculum development and implementation on student engagement, achievement and attitudes to learning during Years 7 to 10;
- identify aspects of teacher professional development that have positive influences on student engagement, achievement and attitudes to learning in Years 7 to 10; and
- identify the impact of different school structures (e.g., Year 7 to 13 secondary, composite, restricted composite, etc.) and settings (e.g., single-sex, co-educational, rural, urban, etc.) on student engagement, achievement and attitudes to learning during years 7 to 10.

1.3 Summary

This critical literature review aims to provide the Ministry of Education with an information base for guiding good practice for middle schooling (Years 7 to 10) in New Zealand schools.

Despite the popularity and diversity of middle schooling approaches, middle schools and middle schooling are neglected areas for research. Indeed, strong evidence for the efficacy of middle schools and middle schooling are conspicuous by their absence.

2.0 METHOD

2.1 Overview

In addition to consulting the extensive holdings of ACER's Cunningham Library,[2] several information databases have been accessed, including: *British Education Index* (BEI); ERIC; *Index New Zealand* (INZ); NFER; *PsychInfo*; NZCER; professional 'middle years' associations; and government websites such as the *Australian Government Department of Education, Science and Training* (DEST), and the *US Department of Education*.

It is important to note that the methodology called for in this review is that of a *critical* review of the available literature. A *critical* review extends beyond synthesis and description to consider the quality, breadth and validity of the research literature – both internal (methods, results and conclusions) and external (ecological validity and generalisability of results). This is essential in areas such as student achievement and engagement during the middle years of schooling where prevailing unsubstantiated views espoused by pressure groups frequently influence decision making. As background to the approach adopted here, especially given the voluminous quantity of published work related to *middle schooling* (see footnote 1), it is worth noting the relative advantages of various approaches to reviewing available published literature in a given area of interest, and in this case, *middle schooling*.

2.2 Approaches to Reviewing Published Research Literature

There are several approaches to synthesising published quantitative and qualitative research in a nominated area, each with its own inherent limitations, namely: the traditional *research review*, the *vote-counting method,* and *meta-analysis*.

The *Research Review*. The standard approach to dealing with divergent findings from many studies is commonly known as a *literature review* or *research review*. Based on their reading of many studies in an area of inquiry, investigators make 'informed' judgements about the direction in which the evidence is pointing. Such is the case for reviews of reports employing both quantitative and non-quantitative methodologies, including *synthesised reviews* of existing reviews.

There are several inadequacies of the traditional literature review. First, although a research review article can offer a handy list of findings in an area, it cannot systematically integrate or cumulate findings in a methodologically rigorous manner. For example, Hunt (1997) cites the following criticism to illustrate the unsystematic, subjective, and armchair approach that is the hallmark of the *research review* article:

> Too often, authors of traditional review articles decide what they would like to establish as the truth either before starting the review process or after reading a few persuasive articles. Then they proceed to defend their conclusions by citing all the evidence they can find. The opportunity for a biased presentation is enormous, and its readers are vulnerable because they have no opportunity to examine the possibilities of biases in the review. (Chalmers & Lau, 1994, cited in Hunt, 1997: 7)

A typical finding from such a *research review* may be characterised as follows: "Whereas Jones and Smith found that strategy X was more effective than strategy Y for teaching reading to children with learning difficulties, Brown found the reverse to be

[2] In this regard, the valued administrative assistance of Ms Patricia Knight (Cunningham Library, ACER) is gratefully acknowledged.

the case. Furthermore, two studies by Carter indicated that there was no significant difference in the reading outcomes of students exposed to either strategy X or strategy Y." An obvious deficiency of such assertions is that the reader is not provided with any evidence to evaluate either the conceptual or methodological validity of the cited research, or the relative effect magnitudes.

The *Vote-Counting Method*. In the *vote-counting method*, researchers sort studies into 'piles' for and against nominated interventions such as procedures, techniques, approaches, and circumstances, and draw conclusions based on the biggest 'pile'. A typical outcome of such an approach in the area of this present review would be a statement along the lines of: "the majority of studies support the effectiveness of 'X' as a strategy for improving the educational outcomes and engagement of students during their middle years of schooling".

Critics of this method point out that every study counts as much as every other, even though one might be based on ten cases and another on 10,000 cases. Furthermore, there is usually little regard given to the varying strengths of results across different studies. A modified example presented by Hunt (1997) illustrates this point. One study might show that 26 students benefited from an intervention whereas 24 did not; that would put it in the positive 'pile'. Another study might show that year 7-10 students in 20 schools benefited from a particular *middle schooling* strategy, but their counterparts in 30 schools did not; that would put it in the negative 'pile'. The issue here is that the second study reveals a more strongly negative effect than the first study does a positive one, but the vote-count overlooks this fact. An additional criticism of the *vote-counting method* is that it does not measure the size of the effect reported in the studies. Even if a conclusion is correctly reached that the studies indicate a positive effect for a strategy, *vote-counting* cannot indicate whether this is a substantial or trivial effect.

Meta-analysis. Meta-analysis is a procedure that enables synthesis of findings across many studies in an area, assess the effects of various moderators, and ascertain the major sources of variability in the program effects. The results of individual studies are converted to a standardised metric or *effect size* expressed in standard deviation (SD) units. The scores are then aggregated across the sample of studies to yield an overall estimate of effect size. Particular attention is given to the magnitude of the effect size. Cohen (1988) suggested that 0.80 SD could be considered a large effect size estimate, 0.50 SD a moderate estimate, and ≤ 0.20 SD a small estimate, although he cautioned that such interpretations are broad and need to be interpreted in light of methodologies used (e.g., length of treatment) and field of study. Larger effects are more commonly found in sociology, economics, and in experimental or physiological psychology research than in personality, social, and clinical psychology research. In education, the typical effect of interventions is small to moderate. Effect sizes of 0.80, 0.50, and 0.20 mean that the score of the average person in the treatment group exceeds the scores, respectively, of 79, 69 and 58 per cent of the comparison group.[3]

As a research methodology applied to literature reviews, meta-analysis has both benefits and limitations. The benefits include the ability to improve the power of small or inconclusive studies to answer underlying questions, and the ability to identify sources of diversity across various types of studies. A rigorously conducted meta-

[3] For further details related to meta-analytic procedures and applications in the conduct of literature reviews, see: Fitz-Gibbon (1984); Hattie (1987, 1992); Hattie, Biggs and Purdie (1996); Hattie and Rowe (2004); Hedges and Olkin (1985); Purdie and Ellis (2005); Thompson (2002).

analysis may reveal how heterogeneity among populations affects the effectiveness of interventions in different settings and with different individuals (e.g., boys/girls, primary/secondary school students). It can also help detect biases, such as publication bias (i.e., the reluctance of authors and publishers to present and accept negative results for publication), as well as deficiencies in the design, conduct, data analysis, and interpretation of findings.

Meta-analytic methods, however, cannot improve the quality or reporting of the original studies. Other limitations are associated with misapplications of the method, such as when study diversity is ignored or mishandled in the analysis, or when the variability of populations, the quality of the data, and the potential for underlying biases are not addressed. Meta-analysis has promoted the sense that obtaining evidence is a global enterprise and that complete information needs to be evaluated and synthesised to obtain the most unbiased results. Analysing sources of bias and diversity is essential to performing, understanding, and using meta-analyses in any field of research.

2.3 Approach and Limitations of the Present Review

The *vote-counting* and *meta-analytic* methods outlined briefly above apply strictly to quantitative studies, and preferably to those studies employing strong evidence-based approaches to provide 'answers' to well-specified research questions. The scientific methodological 'gold standard' for such studies is the *randomised control trial* (RCT) – as documented recently by OECD's Centre for Educational Research and Innovation (CERI, 2007), and by the US National Society for the Study of Education (Moss, 2007). Note also that such studies are advocated strongly by the Iterative Best Evidence Synthesis Programme of the New Zealand Ministry of Education, under the leadership of Dr Adrienne Alton-Lee (e.g., Alton-Lee, 2007).

Regretfully, and perhaps for justifiable ethical, logistic and methodological reasons (see Rowe, Hill and Holmes-Smith, 1995), there is a notable paucity of quantitative studies employing strong evidence-based RCT methods that have investigated the relative effects of various forms of *middle/non-middle schooling* – constituting a major limitation of the present review. Given this constraint and the voluminous quantity of published literature in the area (see footnote 1), the approach adopted here is a *critical* review of **trends** and **themes** in the predominantly non-quantitative published literature. In so doing, the authors have selected indicative themes and trends from the more 'scholarly' sources, in addition to those available from commissioned government reports. Much of the review involves direct quotations and citations from this literature, supported by citations from our own extensive quantitative and qualitative work in this area over many years (e.g., Rowe & Dinham, 2007).

Thus, the present review mainly utilized a combination of analyses of existing reviews of the literature on *middle schooling*, coupled with an examination and analysis of discrete research reports from a variety of individuals and organisations into matters relevant to *middle schooling*. A balance was struck between including literature from various *middle schooling* associations and bodies, and literature which could be considered less 'for' the *middle schooling* movement.

Together with what could be considered 'specific' *middle schooling* literature, this review also considered more general literature, e.g., students' literacy and numeracy achievements and related pedagogy – particularly that which rested on sound

methodological bases. That is, preference was given to literature which rested on a research base rather than 'opinion-oriented' rhetoric.

With such a voluminous literature to consider, as previously noted, the reviewers framed the selection of literature in the light of the review specifications to achieve the following:

1. a balance of literature from New Zealand and other like countries;
2. synthesis of existing large-scale, recent reviews (from 1990) from various educational and governmental bodies; and
3. analysis of individual research reports, with preference given to larger, more rigorous and relevant studies, with appropriate methods, results and conclusions.

A key consideration in every phase of the review was a concern for prioritising research evidence over opinion and advocacy, given the acknowledged and highly contested nature of *middle schooling*. However, in the interests of balance and openness, the review also canvasses views from various stakeholders.

2.4 Section Summary

There are several possible approaches to reviewing published research literature. This critical review consists of highlighting the major trends and themes in the available literature on middle schooling, and relies mainly on the traditional techniques of the 'literature review' or 'research review'. Both individual studies and synthesised reviews, predominantly from New Zealand and like countries, have been included.

Due to a paucity of quantitative studies in the field, the methods of vote-counting and meta-analysis were largely precluded. However, where possible, findings from relevant, quantitative studies have been noted.

Much of the literature on middle schooling is non-researched based, consisting predominantly of opinion and advocacy that are illustrated by direct quotations and citations from this literature. While a representative sample of such writings have been cited, major emphases have been placed on evidence-based reports and reviews.

3.0 BACKGROUND AND CONTEXT OF THE 'MIDDLE SCHOOLING' MOVEMENT

3.1 Preliminary Remarks

Since the mid 1980s, *middle schooling* and the establishment of 'middle schools' have been considered key educational reform initiatives in English-speaking countries, including: Australia, New Zealand, United Kingdom and USA.[4] In fact, the published literature on *middle schooling* is voluminous, and includes papers, articles, government-commissioned studies/reports, books, and curriculum documents that are numbered in their hundreds of thousands.[5] Moreover, professional associations devoted to the advocacy of middle years schooling are well known (e.g., the New Zealand *Association of Intermediate and Middle Schooling*, www.nzaims.co.nz; the UK *National Middle Schools Forum*, www.middleschools.org.uk; the USA *National Middle School Association*, www.nmsa.org; and the Australian *Middle Years of Schooling Association, Inc.* www.mysa.org,au – to cite just a few). A brief comment on the rationale for *middle schooling* is helpful here.

The rationale for reform initiatives focused on *middle schooling* has arisen in response to concerns about less than optimal learning progress among emerging adolescents, and more particularly, their attitudes, behaviours and engagement in schooling.[6] Although numerous attempts have been made to identify curriculum and pedagogical strategies that maximise student engagement, motivation and learning during the middle years, it has noted that whereas the term "…middle schooling refers more to a particular type of pedagogy and curriculum than to a particular type of school structure…setting up middle schools does not guarantee that middle schooling will take place" (Chadbourne, 2001: 3).

This is an important distinction. Indeed, Chadbourne (2003) examines the validity of the oft-cited criticism that separate middle schools for young adolescents undermines academic rigour by citing evidence that such is the case, if and only if school administrators and educators focus on *structure* at the expense of *function* (see: Caldwell, 2006; Lawton, 1999; Loader, 2007). Rowe (2004a,b, 2007a-c) argues that such emphases constitute a major barrier to reform and a key reason why so many 'improvement initiatives' in education fail to live up to initial expectations. Hill (1995, 1998, 2003) observes that most reforms in education are directed at the *preconditions* for learning rather than at influencing *teaching* and *learning per se*. For example, many schools see the 'middle years problem' of schooling, or the 'education of boys', as *structural* ones, leading to the establishment of middle schools, P-12 colleges, special transition programs, and single-sex classes/schools (e.g., Rowe, 1988). However, the bulk of research-based evidence indicates that such structural interventions are little

[4] It should be noted that there are wide variations within and between these countries in both student ages and Grades/Years of schooling that fall within the *middle years* domain. In several countries, the term *middle years of schooling* can refer to a range of Grades/Years from 5-9 (e.g., Australia, UK, USA), whereas *middle schools* in New Zealand encompass Years 7-10 and includes what is known as *Intermediate Schools* (Years 7 & 8). For the purposes of this review, *middle schooling* encompasses Years 7-10.

[5] See footnote 1.

[6] For example, see: Bahr and Pendergast (2007); Luke, Elkins et al. (2003), Newhouse-Maiden, Bahr and Pendergast (2005); and publications by the US National Middle School Association (1995, 2000, 2003a,b).

more than *preconditions* for teaching, and their effects on learning *per se* are, at best, small to negligible, including *class size*.[7]

A key reason for such small effects of 'structural' interventions is they are based on the fallacious assumption that schools and their administrative arrangements for teaching and learning are *advantageous* for the stakeholders they serve (i.e., teachers, students and parents). The fact that this is mostly not the case requires emphasis – reflecting a failure to understand operationally the fundamental distinction between *structure* (e.g., middle and single-sex schooling; class size, etc.) and *function* (i.e., quality teaching and learning provision). Schools and their 'structural' arrangements are only as effective as those responsible for making them work (school leaders and teachers) – in cooperation with those for whom they are charged and obligated to provide a professional service (students and parents) – regardless of students' ages and stages of schooling, and their socio-cultural and socio-economic background characteristics (see: Loader, 2007; Zbar, Marshall & Power, 2007).

By contrast, effective improvement initiatives such as strategic teacher professional learning that are grounded in findings from evidence-based research are concerned not just with establishing *preconditions*, but with making teaching and learning more effective. Rather, they typify attempts to make strong connections between knowledge about school and teacher effectiveness, and the design of effective improvement programs and initiatives aimed at the enhancement of student achievement progress – especially in *literacy* and the related skills of *verbal processing* and *written communication* – of particular relevance to boys and students from so-called 'disadvantaged' socio-economic and socio-cultural backgrounds.

Despite the large volume of published work in this area, strong evidence-based research into schooling during the transitional years known as *middle schooling* is less than adequate in policy terms, and represents something of a 'black hole'. This phenomenon has been noted by New Zealand's Education Review Office (2003: 1) in the following terms: "New Zealand-based information about educational provisions for students in the middle years of schooling is minimal". Nonetheless, while *middle schooling* might be relatively under-researched, there is no shortage of strong views on the subject, both pro and con. Thus, the available literature advocating positive student outcomes for *middle schooling* requires careful examination and critique, which is a key purpose of the present review.

[7] For almost seventy years, the contentious issues surrounding the link between *class size* and students' educational outcomes have been hotly debated and extensively researched – particularly in the USA and Britain. Reviews of this research, including findings from rigorous meta-analytic syntheses, consistently indicate negligible improvements to student achievement outcomes, even when class sizes of 30 students are reduced to 15. The weight of evidence suggests that reductions in class size do **not** yield improvements to student learning independent of changes to teachers' classroom teaching practices, nor to students' behaviours in the classroom (Rowe, 2004c). That is, the personal and professional characteristics of the teacher appear to be key factors associated with notable gains in students' learning outcomes, especially during the middle years. Slavin (1990) argues that reducing class sizes is a low-yield and expensive policy option. Rather, he suggests that providing additional teachers for one-to-one tutoring in the early and middle years of schooling yields far greater improvements in student achievement and is more cost effective. For relevant reviews of 'class size' issues and research, see: Blatchford and Mortimore (1994); Glass (1992); Glass and Smith (1979); Glass *et al*. (1982); Goldstein and Blatchford (1997); Harder (1990); Hattie (1987); Hill and Holmes-Smith (1997); Prais (1996); Robinson (1990); Slavin (1989, 1990).

3.2 Background and Context

As already indicated, it is interesting to note that the middle school *movement* has arisen in the context of prevailing concerns with the academic, personal, behavioural and social problems experienced by some students and groups during the middle years (see Bahr & Pendergast, 2007). Such concerns have resulted in great store being placed on *middle schooling* to perform the function of a *panacea* for perceived adolescent 'problems', despite the paucity of findings from strong evidence-based research to justify its widespread adoption as a legitimate educational strategy. It should also be recognised (as noted earlier) that while *middle schooling* might be relatively under-researched, there is no shortage of strong views on the subject, both for and against. Thus, it needs to be re-emphasised that the available literature on *middle schooling* requires careful examination and critique to distinguish evidence-based research from mere rhetoric.

For most students, the primary to secondary schooling transition means changing schools, and changing peers, teachers and school structures, on at least one occasion. A common concern is that levels of achievement and engagement with learning in the primary years can be undermined by such transitions. Rather than a smooth, linear change, the primary secondary transition has been depicted as an abrupt disjuncture between two distinctive forms of schooling.

Different secondary school structures; expectations on the part of secondary schools and teachers that are too low, inconsistent, unclear or too high; failure of teachers and schools to respond to adolescent needs in the early years of secondary schooling through not utilising effective teaching practices and appropriate, coherent curricula; and a general lack of individual attention – have all been cited as problematic features of transitions from primary to secondary and the early secondary years of schooling. As a result of such issues and the related concerns, middle schools, a third-tier of education bridging traditional primary and secondary schooling, have been advocated for more than a century.

A major aspect and concern of *middle schooling* approaches and philosophies is that of engagement. Disengagement from learning and school by some students in the early secondary years is a well recognised phenomenon in New Zealand and in like countries. Often, 'switching off' is accompanied by behavioural problems which can further undermine educational attainment and later educational participation and achievement. It should be noted, however, that many students negotiate the middle years, and the primary to secondary school transition, with minimal anxiety and disruption. Many are ready for the change and welcome it.

A key question, then, is that of how schools and systems are responding to the perceived developmental needs of students in years 7 to 10, and whether *middle schooling* approaches advantage or disadvantage students moving onto senior secondary education, over and above what they might have achieved in 'regular' primary and secondary schooling. In other words, a central concern of this review is the question of what difference *middle schooling* makes to student achievement and engagement, and whether differences can be explained, measured and evaluated with validity and reliability. Another question rarely asked is what do students and their parents want from schooling in the middle years, and whether these perceived needs are best catered for using middle school approaches?

The issue of age-appropriate pedagogical approaches is an important one, as it is what teachers know, do and value that have been shown by many studies to be more significant in influencing student achievement than structural arrangements such as particular year groupings, length of lessons, single-sex schools, generalist teachers, and so forth (Alton-Lee & Rowe, 2007; Hattie, 2003; Ingvarson & Rowe, 2007; Mulford, 2006; Rowe, 2003, 2007a).

This is particularly important in New Zealand which has such structural variety in education. As noted by the Education Review Office (2001):

> In terms of provision, the sheer diversity of structural arrangements for schooling in New Zealand raises questions about the optimum arrangements for educating Years 7 and 8 students.

In a more recent review, the New Zealand Education Review Office found:

> …no significant difference in the overall quality of education for Years 9 and 10 students in three types of schools namely, composite schools, Years 7 to 13 secondary schools and Years 9 to 13 secondary schools" (Education Review Office, 2003: 46).

Student achievement is not, as some would believe, simply determined by heredity, family and social-cultural background. The quality of teaching and learning provision, including evidence-based instructional leadership does make a significant difference (Alton-Lee, 2003; Alton-Lee & Rowe, 2007; Dinham, 2003, 2007a; Hattie, 2003, 2005), and student performance is subject to variation and change through the schooling years. In a recent report to the New Zealand Ministry of Education, Wylie and Hodgen (2007: 23) note:

> … individuals do respond to changing experiences, opportunities and relationships, and build on what they achieve. …
>
> Differences in competency levels at age 16, and patterns over time, also point to differences in experiences and opportunities. …
>
> Our study indicates that where students become disengaged in learning, they tend to do so before age 12, with the lack of engagement escalating in adolescence and at secondary level.

The above-mentioned report also stresses the importance of both early mastery of literacy and numeracy, and engaging students with learning as soon as possible. This raises the interesting question of whether *middle schooling* might be a more appropriate and effective response to the developmental and learning needs of adolescents, or whether it is in fact, an attempt to remediate disengagement and low achievement already evident in some students during and particularly towards the end of their primary schooling.

With alternative approaches to middle years education being introduced in New Zealand and other places in attempts to improve educational outcomes for students, it is essential that these decisions are informed by the best evidence about effective organisational, curriculum, assessment and pedagogical approaches.[8] This is particularly important because while *middle schooling* arrangements are expanding in

[8] An outstanding example of work in this area for teacher educators derives from the NZ MoE's recent *Best Evidence Synthesis Iteration* document entitled 'Effective Pedagogy in Mathematics/Pāngarau' (Anthony & Walshaw, 2007). A further Australian example for practising classroom teachers is provided by Hoad, Munro et al. (2007); as well as by Rowe, Stephanou and Hoad (2007).

New Zealand, they are being significantly wound back in the United Kingdom and under pressure in the USA – the two 'heart lands' of *middle schooling*.

3.3 Defining the *Middle Years of Schooling*

The middle years have been variously defined, sometimes using age ranges, and sometimes school 'years' or grades (Chadbourne, 2003). Broadly speaking, the middle years refers to young people aged from 10 to 15 years (Prosser, 2006). More importantly, the middle years 'bridge' encompasses the period from pre-pubescence to adolescence and sexual maturity, and from upper-primary to junior-secondary education – traditionally two quite distinct forms of schooling in terms of curriculum delivery, structure and approach.

The middle years are also taken to be the period when young people begin to think more deeply about the world around them and to take a more independent approach to learning and thinking (Northern Territory Council of Government School Organisations, 2005: 1). Chadbourne (2003: 3) has attempted to clarify the matter of terminology as follows:

> At a broad level there seems to be agreement on the meaning of the terms middle years, middle school and middle schooling. For example, as frequently used in the literature, the term:
>
> - 'middle years' refers to the years of early adolescence;
> - 'middle school' refers to a separate organisational unit (a school or sub-school) for young adolescents; and
> - 'middle schooling' refers to a particular philosophy or set of principles about teaching, learning and curriculum for young adolescents.

As already noted in the case of the present review, the middle school years are defined as Years 7-10, which encompasses the ages of 11 to 15 years and bridges the earlier conceptualisations of intermediate and secondary schooling. In New Zealand, primary schooling has been generally taken to be Years 1-6 (ages 5-11), intermediate schools Years 7-8 (11-13 years), and secondary Years 9-13 (13-18 years). Because of this arrangement, some New Zealand students have experienced an additional school transition – primary to intermediate to secondary – compared with other 'two-tier' schooling structures based on the transition from primary to secondary education. As is noted later, transitions have been found to be problematic for some students.

3.4 What are Middle Schools?

The establishment of middle schools have arisen in response to the perceived needs of students of the middle years, and can be a structural arrangement and/or a pedagogic approach/philosophy to accommodate students in that age range. Thus, a middle school can be both a building and a philosophy. However, in practice, Pendergast (2005: 5) notes:

> … generally speaking, middle years work has tended to focus on the convergence and transformation of curriculum, pedagogy and assessment, and to a lesser degree on organisational elements to meet the needs of young adolescents. It is not about rearranging traditional structures, but it is a new concept altogether.

In reality, there are a wide range of middle school models and structures, including: separate middle schools encompassing anything from around year 5 to year 10; middle school units within a larger K/1- year 12/13 framework; middle school units within existing primary schools; middle school units within a larger secondary school, and

traditional primary/secondary schools which adopt middle school philosophies and practices (NT COGSO, 2005: 12-13; citing Luke et al., 2003).

Within the range of types of middle schools and *middle schooling* outlined above, there are further variations. Some middle schools are single sex, others co-educational. Some students and classes are academically streamed, some partially streamed, and others un-streamed or of mixed ability. Some middle schools have separate classes for certain groups such as Indigenous or non-English-speaking background students. Some have single sex streams or classes within a co-educational framework (termed 'twinning', or 'parallel' classes). Some schools organise learning into stages, some ages, and others capability. Some organise learning around traditional subject areas, whilst others utilise thematic and integrated approaches (in some or all areas of the curriculum). Some utilise specialist teachers, some generalists, and others both. Some middle schools contain specialist units for students with various forms of learning, intellectual and physical disability. Internationally, nationally and even provincially, the variations in middle school organisation are almost endless.

It is important to recognise that building or designating a middle school does not guarantee that accepted *middle schooling* practices, and therefore desired outcomes, will take place (ACT DET, 2005: 40). Further, it is possible that a 'regular' secondary school is more advanced in implementing *middle schooling* approaches than a designated middle school. Leadership and teachers' professional learning, particularly in the areas of curriculum design, pedagogy, assessment and student welfare, are essential in creating an effective *middle schooling* environment (Pendergast & Bahr, 2005; Dinham, 2007a).

A consistent theme of this review is that the wide range of types and approaches to *middle schooling* can make evidence-based comparisons and data collection of middle school performance difficult. The NT COGSO report into *middle schooling* concluded (2005: 14):

> There is no conclusive evidence that any grade configuration is better than any other … There is no definitive research evidence available that says one particular grade or year configuration for a school is preferable to another …[although] Frequent transition between narrowly configured schools can lower student achievement.

Grady (2007) goes further to state that:

> … findings from research on school effectiveness suggest that what distinguishes the higher- from the lower-performing schools is less about grade configuration and more about the fundamental conditions of learning, such as teacher quality, academic program rigor and coherence, principal leadership, instructional strategies, quality of community partnerships, effective use of data, and a culture of respect among adults, students, and parents. The report … – *New York City's Middle-Grade Schools: Platforms for Success or Pathways to Failure?* by the New York City Coalition for Educational Justice – argues that the middle school crisis "requires bold action to transform our middle grades, action that goes beyond changing the grade configuration in our schools" and calls for "comprehensive reform" to ensure that all middle-grade students have access to:
>
> - well-rounded and rigorous curriculum that puts them on the road to college;
> - strong academic, social, and emotional supports for all students;
> - highly qualified teachers and principals who understand early adolescent development; and
> - smaller class sizes.

3.5 Development of the Middle School Concept

The middle school is generally taken to have developed in the USA in the early part of the 20th century. To some degree, the development of the concept paralleled, reflected and reinforced the social construction of adolescence in the USA and elsewhere in the western world.

Whereas previously, puberty marked the change from childhood to adulthood, and from schooling (preparation for adulthood) to work and adult responsibility, the 20th century saw the extension of adolescence and schooling and the delay of work and life responsibilities, at a time when sexual maturity was occurring at younger ages (see Ariès, 1973). As a consequence, adolescence, the transition from child to adult, was extended over a longer period and became more of a 'stage' rather than an event (see: Jung, 2007).

Prior to the first middle schools, American schooling was typically organised into two blocks of eight years (elementary school) and four years of secondary school. In 1899, American schooling was restructured into two, six-year blocks. However, continuing concerns over primary to secondary transition and post-compulsory retention/high school completion saw the first junior high schools established from 1909. Junior high schools comprised grades 7-9 and were separated from elementary schools and senior high secondary schools, the latter bearing geared more towards college entry.

However, as Prosser has noted (2006), by the late 1960s, the prevailing view was that the junior secondary school was in urgent need of reform. The response was a middle school model and movement which grew quickly to encompass tens of thousands of Grade 6-8 middle schools, with revamped Grades 9-12 schools 'on top', and elementary schools which now ended at Grade 5 instead of Grade 6.

Rather than simply being perceived and configured as junior high schools, the increasingly common American Grade 6-8 middle schools were characterised by 'new', specialised approaches to teacher training and pedagogy, including integrated curriculum. However, there were still concerns over adequately meeting the developmental needs of students, and as Prosser notes (2006: 4):

> This resulted in a flurry of research papers culminating in the publication of the influential *Turning Points* paper in the late 1980s[9] … This project identified a mismatch between student needs and school structures/curriculum, high levels of student alienation, significant absenteeism and poor quality teaching.
>
> … At the core of *Turning Points* was the promotion of small and connected community schools, a strong academic focus, the pursuit of success for all students, expert middle school teacher training, and the promotion of health and fitness amongst students … *Turning Points* also listed a number of key qualities for middle schooling, which have subsequently been widely adopted …:
>
> - A focus on student developmental needs;
> - High academic expectation;

[9] In 1989, The Carnegie Corporation of New York issued "Turning Points: Preparing American Youth for the 21st Century," a landmark report which recognized the need to strengthen the academic core of middle schools and establish caring, supportive environments which value adolescents. The findings of the *Turning Points* report, along with ten years of research and practice data from middle schools around the country, led to the creation of the National Turning Points Network." Available at: http://www.turningpts.org/history.htm.

- Life connection;
- Interdisciplinary teaching; flexible scheduling; and
- Student advisory periods.

Nevertheless, the later *middle schooling* movement of the USA has not been without its critics, and one of the most persistent and contentious issues has been whether *middle schooling* actually delivers enhanced student achievement and engagement, or is merely a fashion, doctrine or financial convenience. Some supporters respond to the criticisms of middle schools with the defence that the concept has never been implemented in its pure, intended form.

More recently, the *No Child Left Behind* (NCLB) legislation in the USA,[10] and greater use of standardised testing for accountability purposes, has led some to question whether the whole concept of *middle schooling* is being undermined and distorted through a reversion to testing. This has resulted in widespread practices with teachers responding by 'teaching to the test', amounting to a longstanding proclivity in USA schools of 'the tail of testing wagging the curriculum dog' (Taylor, 1994).

Others, however, feel that middle schools have under-performed in comparison with regular 'junior highs' and that this underperformance is now being revealed by standardised testing.

3.6 The Philosophy of Middle Schooling

Many of the statements written about *middle schooling*, like philosophic statements generally, focus on what "*should* be the case rather than what *is* the case, on ends rather than means, and on purposes rather than operations" (Chadbourne & Pendergast, 2005: 22).

The writings from advocates for *middle schooling* tend to be aspirational and 'blue sky', bordering at times on rhetoric and doctrine. The US National Middle School Association (NMSA) has noted (2003:1):

> For middle schools to be successful their students must be successful; for students to be successful, the school's organisation, curriculum, pedagogy, and programs must be based upon the developmental readiness, needs and interests of young adolescents.

The NMSA goes on to state (2003: 35-36):

> The importance of middle level education can never be over-estimated. Lives are at stake. …
>
> Middle level schools are in a particularly critical position because of the opportunity they have to influence, for better or worse, not only the students themselves but society at large. The future for our society hangs in the balance.

Carrington et al. (2002: x) have provided a generalised philosophy of and for *middle schooling*:

> The underlying philosophy of reform in the middle years of schooling revolves around the provision of a seamless transition from primary schooling (which is traditionally student-centred) to secondary schooling (which is traditionally subject or discipline-centred) leading to more effective student learning, positive experiences in adolescence, and a desire and capacity for lifelong learning.

[10] See: Center on Education Policy (2003); LaTrice-Hill (2002); US Department of Education (2002).

Fundamental principles underpinning *middle schooling* philosophies are that students in the middle years require:

- a different kind of school environment and curriculum;
- teaching which better accommodates their educational, personal and social needs and development, and
- assistance in the transition between traditional primary school and secondary education, and from childhood to adulthood.

It is believed that middle school age students will benefit from being in a situation without younger primary and older secondary students, both of which are at differing levels of development. Implicit in most conceptions of *middle schooling* is the belief that a different form of school organisation and pedagogic approach will facilitate enhanced student achievement over and above that which could be achieved in traditional upper primary/lower secondary education (NT COGSO, 2005: 15):

> … major reports generally identified student alienation and disengagement from school as significant factors contributing to under-achievement in the middle years. …A general conclusion from these studies was that improvements in the education of young adolescents could be made by challenging existing structural arrangements separating primary and secondary schools and identifying a middle phase of schooling with a clear purpose centred around developmental tasks.

Dowson et al. (2005) paint a fairly bleak picture of traditional schooling for the middle years, and based on their review of the literature, see the following as "key elements" of effective middle schools associated with curricula responsive to the developmental needs of early adolescents:

- *Relevance* – personal meaning derived from middle-school curricula which engages students with the 'real world';
- *Responsibility* – appropriate self-control over learning, accountability and responsibility;
- *Belonging*- sense of acceptance and affirmation within a supportive and safe learning environment;
- *Awareness* – both self and social awareness, through appropriate curricula and learning;
- *Engagement* – defined here as meeting students' developmental needs through tasks which are motivating, challenging and invite affiliation;
- *Competence* – developing personal expertise and competencies, knowledge and skills;
- *Ethics* – ethical awareness facilitated; personal values developed; and
- *Pedagogy* – active rather than passive learning.

Nonetheless, many have questioned whether the philosophy and enactment of *middle schooling* is any different from that of 'good' teaching and effective schooling generally. Chadbourne (2003: np) has commented:

> … middle schools are designed to cater specifically for students in the middle years of schooling; that is, students in the middle of the developmental continuum from childhood to adulthood. They are also meant to be based on the philosophy of middle schooling. In practice, however, considerable variation exists across middle schools and it is questionable whether the philosophy of middle schooling applies solely to middle schools. These discrepancies need to be resolved to persuade

> sceptics that the rationale for middle schools and middle schooling is not flawed by lack of clear definition.

To assist the achievement of some form of clarity in respect of the philosophy of *middle schooling*, and to distinguish it from other forms of schooling, Chadbourne (2003: np) provides seven propositions:

> *Proposition 1.* While the philosophy of *middle schooling* in itself is not distinctive, its application to young adolescents is. That is, although *middle schooling* principles and practices may be common and central to all progressive education programs, their application can and should be context-specific. …
>
> *Proposition 2.* While the principles recommended by progressive educators may apply equally to students of all ages and stages, proportionally more middle schools implement more of these principles than do other schools. …
>
> *Proposition 3.* While the philosophy of *middle schooling* is equally valid for students of all ages and stages it was middle schoolers who formulated it. Also, proportionally more middle schoolers make their philosophy more explicit more frequently than do their counterparts in other schools. …
>
> *Proposition 4.* While a variety of initiatives has been used over the past fifty years in Australia, and other countries, to introduce progressive education and break the mould of traditional practices, middle schools stand out as offering most hope for a wide and enduring impact. …
>
> *Proposition 5.* While the boundaries of primary and secondary schooling are based on historical developments that make them dated, middle schools are based on a particular phase of student development - early adolescence. …
>
> *Proposition 6.* While the days are long over when it might have been meaningful to talk of a primary or secondary school movement, it is still legitimate to talk of a middle school and *middle schooling* movement. This is because, unlike primary and secondary education, further pioneering work is required to gain ground for middle school expansion. …
>
> *Proposition 7.* While in some parts of Australia and the USA all schooling levels (primary, middle and secondary) are supported by level-specific teacher education preparation, the middle school teacher education programs are developing characteristics that distinguish them from the other programs. In broad terms these characteristics include: more focus on early adolescence, more focus on crossing the primary/secondary school divide, more focus on working within a small middle school learning community structure, and more focus on making generic principles middle-years-specific.

3.7 Why interest in the Middle Years? Are the Middle Years Special?

Since the mid-1960s, there has been a much greater focus on effective schools, both primary and secondary, and on school change and improvement. However, while the primary and upper secondary years have received the bulk of attention from researchers and policy makers, the middle years have until recently been described as 'forgotten', and a 'black hole'.[11] The middle years have been problematised as a critical period when young people experience substantial physical and emotional change which prepares them for adulthood. During this time, some students disengage or are

[11] It is for this reason that a four year major study of schools achieving exceptional student outcomes in Years 7 to 10 in New South Wales public schools was launched in 2001, known as ÆSOP – *An Exceptional Schooling Outcomes Project* (see: Dinham, 2007a; Graham et al., 2007; Panizzon et al., 2007; Paterson et al., 2007; Pegg et al., 2007; Sawyer, Baxter et al., 2007; Sawyer, Brock et al., 2007). Findings from this project are drawn upon at various stages of the present review.

alienated from learning, and growth in academic attainment can plateau or even fall (e.g., Masters, Meiers & Rowe, 2003; Rowe, 2006b, 2007d; Rowe & Hill, 1996). There are concerns over literacy and numeracy achievement as well as concerns over failure to engage with, and continue studies in subjects such as mathematics and science in the senior secondary years and beyond (see Rowe, 1988).

These are also the years where attitudinal, behavioural and social problems can escalate, and absenteeism, suspension and expulsion from school are most common, especially for boys (see Bernard, Stephanou & Urbach, 2007). It is also a period when matters such as body image and sexual orientation can become critical issues for some (e.g., Sax, 2005). There is an important principle underpinning *middle schooling* that these phenomena are attributable, at least in part to, and can be ameliorated by, different organisational, curriculum, assessment and pedagogical approaches.

It is important to note, however, that it is unwise to over-generalise about young people during their middle years of schooling, or indeed to generalise about the different phases of schooling. While some young people during their middle years of schooling may experience powerlessness, social estrangement, meaninglessness and "normlessness" (ACT DET, 2005: 8), many will not. While some may find the transition from primary to high school difficult, many will be ready for and will relish this change. Whereas some may benefit from an extended period of primary-like education, others will not.

3.8 Section Summary

There has been a major expansion in the calls for and adoption of middle schooling approaches since the mid-1980s, driven by concerns over the developmental and learning needs of adolescents. Such concerns have resulted in a diversity of structural responses to schooling in the middle years. However research evidence for the effects on learning outcomes from these responses is weak and inconclusive. Moreover, research on middle schooling and middle schools is problematic because of the different definitions of the middle years and different approaches to the structure *of middle schools – often at the expense of* function *(i.e., teaching and learning). Further, designating or building a middle school does not guarantee that accepted middle schooling practices will occur, or that the desired outcomes of middle schooling will be achieved.*

The Middle School structure and concept developed in the USA in the early part of the 20th century. Since then there have been persistent concerns from some quarters as to whether middle schools actually deliver in terms of student achievement and engagement. More recently, the widespread adoption of standardised testing and other accountability measures have cast doubt on the efficacy of middle schools in the USA.

Professional associations devoted to the advocacy of middle years schooling have been influential in countries such as New Zealand, the USA, the UK and Australia. Indeed, great store has been placed in middle schools and middle schooling approaches to solve an array of perceived 'problems' associated with adolescence. Many of the statements written about middle schooling from these sources are at best aspirational and border on doctrine and rhetoric generated by their gatherers and purveyors.

There is evidence to suggest that the primary to secondary transition can be problematic for some students. While some young people do experience problems with the primary to secondary transition, and appear to disengage from schooling during the early secondary years, there is danger of over-generalising about all young people in this age range. While some will benefit from a period of extended primary-like education, others will not.

There is strong evidence indicating that the quality of teaching which students receive at all levels and stages of schooling is of major importance in influencing student achievement outcomes. In fact, the effects of quality of teaching far outweigh factors associated with students' family socio-economic and social-cultural backgrounds. Many writers have questioned whether the philosophy and principles of middle schooling are any different from those of good teaching and effective schooling generally.

While middle schooling arrangements are expanding in New Zealand, they are being significantly wound back in the United Kingdom and under pressure in the USA, two 'heartlands' of middle schooling.

4.0 MIDDLE SCHOOLING IN NEW ZEALAND AND OTHER LIKE COUNTRIES

4.1 New Zealand

Despite more than a century of debate and discussion, middle school education has been relatively slow to develop in New Zealand, with strong views both in favour of, and against the concept. Nolan and Brown (2002: 34-35) have been critical of the 'for' case, expressed in the following terms:

> … the school system does not deal with students in the middle as a discernable group and, on the whole, it does not provide them with the distinctive middle level education that they need. The New Zealand intermediate school, a quasi-two-year "middle school" provides only a partial solution. While seven four-year middle schools have been established since 1995, the primary and secondary teachers' associations and many school principals, especially secondary principals, are opposed to them, mainly for political and expediency, not educational, reasons.

Indicative of the disparity of views on *middle schooling*, Smith, writing as the president of the New Zealand Post Primary Teachers Association (2003: 6), rejected the notion that the middle years are 'forgotten', and pointed to faulty methodology and a bias towards *middle schooling* on the part of the New Zealand Education Review Office in its report *Students in years 7 and 8* (2001).

On the other hand, Nolan and Brown (2002: 35) make the point that although many elementary and intermediate teachers in New Zealand appear to be opposed to the four-year model of middle schools (Years 7-10), they are increasingly adopting the philosophy and approaches of *middle schooling*. Nolan and Brown (2002: 37-38) comment, however, that while:

> The elementary and secondary schools which predominate in New Zealand have changed and developed in both general and specific ways over the years … the general form of education they provide has remained essentially the same. The elementary schools remain expressive and nurturing, focussed on the development of generic attitudes, knowledge and skills. In some important respects … New Zealand elementary schools are renowned internationally, but they are nonetheless not places well suited for emerging adolescents. The secondary schools have persisted with a largely discipline-based, compartmentalised, and academic curriculum and, in the main, their teachers employ a didactic form of pedagogy. The intermediates are generally thought to be different from the elementary and secondary schools. It remains moot … as to whether they cater to the needs of the children who attend them any better than do the other types of New Zealand schools which emerging adolescents attend.

In calling into question the efficacy of New Zealand's existing intermediate schools, and thereby implicitly arguing in favour of structure, Nolan and Brown (2002: 38) warn:

> A major caveat is that no matter how well any given intermediate school might embody and implement middle level educational principles, the two-year grade span seriously impedes the realisation of their potential as middle schools … intermediates can provide students, at best, with only a truncated experience of middle school philosophy and practice, and this at the very point when the students that attend them need continuity, coherency, and sustained challenge over a longer period.

Ward (2000: 366-367) has provided an overview and background to *middle schooling* in New Zealand:

> In New Zealand, the traditional transition school for most pupils is the Intermediate School. Such schools cater to 11 and 12 year-olds (Years 7 and 8) and feature home-room teaching, characteristic of primary schools, with some additional specialist teaching. In this way they offer the pupils the continuity of the familiar integrated curriculum delivery model, while introducing specialist teaching which is more characteristic of secondary schools. Over the last decade, changes in national education policy in New Zealand have allowed schools to become more self-managing and also to extend their client base. As a result, some primary schools (Years 0-6) recapitated to include Years 7 and 8. But the most significant change occurred where Year 7 to 8 intermediate schools were extended to include Years 9 and 10, thus becoming four-year middle schools.
>
> Because Years 9 and 10 were traditionally the preserve of secondary schools, considerable debate ensued as to the ability of middle schools to adequately cater to this age group. Advocates of retaining the traditional transition stage at the end of Year 8, largely representative of the secondary teachers union, were the most vocal.

The objection to the establishment of Year 7-10 middle schools and the necessary delay of transition to secondary included:

- Pupils who enter secondary school at about age 13 (Year 9) embark on a four or five year, longitudinal program in each subject. Late entry into the program (at say, Year 11) interrupts the continuity of a program's content and skills progression.
- Year 11 includes a significant challenge when pupils sit for the first national exam, the National Certificate of Educational Achievement (NCEA). Pupils who enter secondary school in Year 11 already have sufficient challenges in adapting to a new school environment.
- Because middle schools do not have the qualified specialist subject teachers and laboratory resources, typical of secondary schools, pupils from middle schools will be inadequately prepared for secondary programs.
- By the time secondary school pupils are entering their third year, they have established strong social cohesion. Middle school pupils entering the social scene at this stage will have difficulty in being included socially, to be part of a substantially different culture.

To test some of these views, Ward tracked the movement of a class of students who moved through years 9 and 10 at Hamilton Middle School, rather than transferring to secondary schools at Year 8, and through their transition to four different secondary schools. Overall, Ward (2000: 373) found:

> From a transition perspective, those who enter secondary school later bring with them an added maturity to cope. For them, coping with transition is soon subjugated in favour of dealing with the social demands of the adolescent culture. But, on reflection, all those in this study, along with a sample of parents, maintained that delaying transition to secondary school was a favourable move.

McGee et al. (2003) carried out a review of the New Zealand and international literature on the transition to secondary school and concluded (2003: 53):

> … it is clear that there is a considerable amount of international concern about transition from primary to secondary school. In the case of New Zealand, comparatively little research has been carried out on transition.

> Consequently, there are numerous gaps in what is known about transition. Much of the New Zealand information is anecdotal, and there is a shortage of research information that links transition to school achievement. Furthermore, much more needs to be known about different student populations, for example, Māori, Pacific groups and other ethnic groups, low achievers, high achievers, boys, girls, and different socio-economic groups.

Māori and Pasifika Education

As noted above, a key concern in New Zealand is the relatively low academic performance of Māori and Pasifika students. In a recent New Zealand report, *Teacher Professional Learning and Development Best Evidence Synthesis Iteration (BES)* (Timperley, Wilson, Barra & Fung, 2007a), Russell Bishop, Foundation Professor of Māori Education at the University of Waikato, made the following observations concerning Māori education (2007: xviii-xxi):

> There remains … the seemingly immutable problem of achievement differential, with Māori and other minoritised children continuing to score less on standardised achievement tests across all age ranges. Over all, this group has a very poor experience of school, and this has been the case for generations. …
>
> The usual explanation was that Māori students were culturally deprived: there were few books in their homes, they were not read to from an early age, and so on. …
>
> In 2001 I returned to my concern about the achievement of Māori students. During that year, a group of us began a systematic examination of teachers' experiences of working with Māori children. As I interviewed teachers, I heard them recount time and time again exactly the same kind of experiences that I had had in the 70s and 80s. They told me of their high aspirations for all of their students, including Māori. They told me of their frustration at not being able to reach Māori students and make the difference for them that, by and large, they were able to make for their other students. They talked about not being able to be what we have since come to term 'agents of change', to feel that they were *agentive* or efficacious. They felt that their ability to make a difference was being compromised by forces beyond their control. Most spoke of being angry, isolated, and professionally bereft of solutions, yet expected by society to provide them. They also spoke about the difficulties they had experienced when trying to translate externally located and curriculum-focused professional development into classroom practice. They were hoping that we could provide them with answers. …
>
> We were told time and again by many of those we interviewed in 2001 that negative, deficit thinking on the part of teachers was a fundamental cause of negative student–teacher relations. Students, whanau, principals, and teachers gave us numerous examples of the resulting negative behaviours and their consequences for both students and teachers. Teachers spoke of their frustration and anger. Students told us of their aspirations to learn and to take advantage of what the school had to offer, and how negative teacher actions came across as an all-out assault on their identities as Māori and their need to be accepted and acceptable. The end result was that they were precluded from participating in what the school had to offer. …
>
> We learned that this positive thinking is fundamental to the creation of learning environments where young Māori can be themselves, where Māori students' humour is acceptable, where students can care for and learn from each other, where being different is acceptable, and where the power of Māori students' own self-determination is fundamental to classroom relations and interactions. Indeed, it is the interdependence of self-determining participants in the classroom that creates vibrant learning environments characterised by the growth and development of quality learning relations and interactions, increased student attendance, engagement, and achievement on both school- and nationally-based measures. …

> The authors of this BES found that as teachers understood the impact of their practice on their relationships with students in their classrooms and/or learned new approaches to teaching that led to accelerated student learning, they felt more agentive and, in turn, refocused on the teaching–learning relationship. As a result, they had higher expectations of their students. Higher expectations cannot be taught or imposed independent of context; they develop out of improved relationships.

Bishop's comments cited above are characteristic of a longstanding and prevailing preoccupation with socio-cultural determinism throughout New Zealand's education system that is reflected in research, policy and practice.[12] Nevertheless, to his credit, Bishop (2007: xxi) recognises the importance of an evident refocus among teachers "…on the teaching-learning relationship". In this context, the internationally-renowned work of Professor John Hattie of the University of Auckland is worth noting. Based on meta-analytic syntheses of findings from more than 500,000 evidence-based studies, Hattie (2003: 2-3) has expressed the implications for New Zealand as follows:

> **Schools** account for about 5-10% of the variance in student achievement outcomes. Schools barely make a difference to achievement. The discussion on the attributes of schools – the finances, the school size, the class size, the buildings are important as they must be there in some form for a school to exist, but that is about it. Given NZ schools are well resourced with more uniformity in the minimum standards than most countries, it should be less surprising that in NZ the school effects are probably even lower than in other countries.
>
> **Teachers** account for about 30% of the variance. It is what teachers know, do, and care about which is very powerful in this learning equation.
>
> **Students** account for about 50% of the variance in achievement. It is what students bring to the table that predicts achievement more than any other variable. The correlation between ability [i.e., prior achievement] and achievement progress is high, so it is no surprise that bright students have steeper trajectories of learning than less bright students. Our role in schools is to improve the trajectory of all these students, and I note the recent PIRLS and TIMMS studies which have shown that our [NZ] trajectory for the not so bright students is one of the flattest in the OECD world.

With a particular focus on government policy and educational provision in New Zealand schools, Hattie continues to assert:

> When I review the initiatives of the previous Ministries of Education up to a couple of years ago, and when I review the policies in so many New Zealand schools, I note that the focus of discussions are more about the influences of the home, and the structures of schools. We have poured more money into school buildings, school structures, we hear so much about reduced class sizes and new examinations and curricula, we ask parents to help manage schools and thus ignore their major responsibility to help co-educate, and we highlight student problems as if students are the problem whereas it is the role of schools to reduce these problems. Interventions at the structural, home, policy, or school level is like searching for your wallet which you lost in the bushes, under the lamppost because that is where there is light. The answer lies elsewhere – it lies in the person who gently closes the classroom door and performs the teaching act – the person who puts into place the end effects of so many policies, who interprets these policies, and who is alone with students during their 15,000 hours of schooling.
>
> I therefore suggest that we should focus on the greatest source of variance that can make the difference – **the teacher**. We need to ensure that this greatest influence is

[12] For example, see: Biddulph, Biddulph and Biddulph (2003); Harker (2006).

> optimised to have powerful and sensationally positive effects on the learner. Teachers can and usually do have positive effects, but they must have exceptional effects. We need to direct attention at higher quality teaching, and higher expectations that students can meet appropriate challenges - and these occur once the classroom door is closed and not by reorganising which or how many students are behind those doors, by promoting different topics for these teachers to teach, or by bringing in more sticks to ensure they are following policy.

These assertions by Hattie are consistent with key findings arising from the four-year Australian longitudinal study known as the *Victorian Quality Schools Project* involving 13,800 primary and secondary students drawn from a designed sample of government Catholic and independent schools.[13] These findings led to the conclusion:

> …on the basis of our findings to date it could be argued that effective schools are only effective to the extent that they have effective teachers (Rowe et al., 1993: 15).

Additional implications of this research for New Zealand are worth noting here. Consistent findings from the evidence-based research literature related to the relative impact of teaching and schools on accounting for variance in student achievement outcomes suggest that the variation between class/teacher groups within schools is notably greater than the variation between schools (Cuttance, 1998, 2000; Muijs & Reynolds, 2001). As reported by Alton-Lee and Rowe (2007), such is also the case for NZ. In fact, compared with most countries, NZ has larger variation within schools than between schools. Notwithstanding the possible effects of differences between schools in terms of student background factors and intake characteristics, or any 'class-ability' streaming allocations that may operate within NZ schools, this finding is important. If most of the variation in student achievement is within schools, "…reform efforts need to focus on improving the performance of low performing students within schools" (Willms, 2007: 4). With this in mind, Willms (2007: 12) highlights at least two key policy implications for NZ, as follows:

> First, school reforms should focus on within-school interventions for all schools, rather than whole-school reforms targeted at low performing schools. Second, within-school interventions should **not** focus particularly on children from low-SES families; rather, they should be universal interventions aimed at improving results for all students, or performance interventions targeted towards those with low levels of academic performance.

Further review of and comment on the research literature related to the importance of teacher and teaching quality is provided later in this document.

4.2 United States of America

As noted in the earlier discussion on the development of middle schools and *middle schooling*, the influence of the USA on the *middle schooling* 'movement' has been profound. Today, around 20 million 10-15 year-old American students are enrolled in US middle schools [National Middle School Association (NMSA), 2003: 1].

In the USA, the earlier configuration of Grade 7 to 9 junior high schools in existence since the first decade of the 20th century, has been gradually replaced since the 1970s-1980s with middle schools serving Grades 6 to 8. Currently, the number of middle schools (over 16,000) greatly exceeds the number of junior highs (around 2,000) in the USA (NMSA web site).

[13] For specific details, see: Hill et al. (1996); Hill and Rowe (1996, 1998); Rowe, Holmes-Smith and Hill (1993); Rowe and Hill (1998); Rowe and Rowe (1999).

The National Middle School Association was established in 1973 now has in excess of 30,000 members and is affiliated with 58 other national and international middle school organisations. The mission statement of the NMSA (web site) notes that:

> The National Middle School Association is dedicated to improving the educational experiences of young adolescents by providing vision, knowledge, and resources to all who serve them in order to develop healthy, productive, and ethical citizens.

The middle school lobby in the USA has been an influential one, with the NMSA at the forefront. It also needs to be noted that the development of middle schools in the USA has not been generalised across all areas, but has been concentrated in poorer socio-economic areas with high African-American and Hispanic populations, perhaps reflecting the underlying concerns of *middle schooling* with engagement/alienation, attendance, retention and lifting academic achievement. Ironically, some have speculated that while middle schools have been concentrated in lower socio-economic areas with predominantly disadvantaged, minority clienteles, middle schools are actually better suited to the children and values of the middle classes (Jung, 2007).

However, as already noted, there has been a degree of rising concern with the outcomes of middle schools, to the extent that there is a swing in some states to K-Grade 8 schools, with some calling for a second wave of middle school reform.

Difficulties with measuring *middle schooling* effectiveness are a common theme in this review. The vast majority of studies are 'in house' and qualitative in nature. In the USA, middle schools have been criticised for the poor academic outcomes of their students, yet as noted, these tend to be dominated by minorities.

Overall, the research evidence on *middle schooling* in the USA is mixed. A major study was commissioned by the Rand Corporation, *Focus on the Wonder Years Challenges Facing the American Middle School*. Research findings of the study were reported in *Problems and Promise of the American Middle School* (Augustine et al., 2004). In brief, findings from the study have been summarised thus:

> **Separating the Middle Grades is Associated with Transition Problems**
>
> The history of reform indicates that a separate middle school has become the norm more because of societal and demographic pressures than because of scientific evidence supporting the need for a separate school for young teens. In fact, there is evidence suggesting that separate schools and the transitions they require can cause problems that negatively affect students' developmental and academic progress.
>
> **Progress on Academic Outcomes is Uneven**
>
> Data show slow but steady increases in achievement scores since the 1970s. However, about 70 percent of American 8th-Grade public-school students fail to reach proficient levels of performance in reading, mathematics, and science on national achievement tests. This is particularly true for Latinos and African Americans, who continue to lag behind their white counterparts, even when their parents have had college educations.
>
> **Conditions for Learning are Sub-optimal**
>
> *Conditions for learning* are factors that can enhance or diminish a student's ability to learn. Particularly relevant to young teens are motivational and social-emotional indicators of well-being that are related to academic performance. Disengagement and social alienation not only are related to low achievement but also predict dropping out. National school safety statistics suggest that physical conflict is especially problematic in middle schools, and student concerns about safety predict emotional distress that can compromise academic performance. Such findings

underscore the need to examine a variety of student outcomes in addition to academic indicators. …

The Vision of the Middle School has not been Fully Implemented

The continuing lacklustre performance of middle schools might also be explained, in part, by inadequate implementation of the middle school concept in most districts and schools. Core practices such as interdisciplinary team teaching and advisory programs tend to be weakly implemented with little attention to the underlying goals. A sufficient level of fidelity to many of the reform practices is not possible without substantial additional attention, resources, and long-term support.

Middle School Teachers and Principals Lack Appropriate Training and Support

Many middle school teachers do not have a major, minor, or certification in the subjects they teach or training in the development of young adolescents. Evidence-based models of professional development for teachers should be adopted to improve the subject-area expertise and the pedagogical skills of teachers.

Parental Support Wanes

Research shows that parental involvement declines as students progress through school and that middle schools do less than elementary schools do to engage parents.

New Reform Models Show Promise

Our review of whole-school reforms and professional development practices identified some promising models that address both academic achievement and the development needs of young teens. If fully implemented, these models might propel our schools forward toward the high levels of achievement that are the goal of the *No Child Left Behind* (NCLB) policy.

Looking Ahead

Today's emphasis on higher standards (such as those NCLB articulates) and on increased accountability through academic testing poses at least two challenges for middle schools. First, as legislation focused solely on academic achievement outcomes holds greater sway, the developmental needs of children might take second place, even though the two are highly interrelated. Second, it is unclear whether adequate federal and state supports are available for schools and students to meet the new standards. Regardless of the nature and scope of the next middle-grade reform efforts, state and federal support is needed at this time, and the efforts of various agencies, organizations, and foundations should be well coordinated. Continuity of effort is likely to provide the right conditions for student growth, institutional improvement, and educational progress. While NCLB creates a feeling of urgency, that urgency should be translated into steady, reasoned attempts to improve the schooling of all our young teens.

4.3 United Kingdom

The history of middle schools in the United Kingdom has been one of relatively recent enthusiasm and rapid growth, followed by a 'patchy boom', and then decline under the influence of the National Curriculum, comprehensive schooling, and other factors (see below).

Middle schooling in the UK has never followed a single approach or model. Rather, Local Education Authorities (LEAs) instituted various models from the 1960s, with the result that there were at any time up to six different configurations of *middle schooling* operating (UK Middle Schools website, undated):[14]

[14] http://www.tafkam.pwp.blueyonder.co.uk/msuk/

1. *Middle* - ages 8-12;
2. *First and Middle* ('combined') – ages 5-12 [considered by some a single tier];
3. *Middle* – ages 9-12;
4. *Middle* – ages 9-13;
5. *Middle* – ages 10-13, and
6. *Junior High* – ages 10-14.

Overall, middle schools are a school structure that is in rapid decline, although there is still enthusiasm for *middle schooling* philosophies and approaches within the traditional two-tier primary/secondary schooling models.

The UK Middle School web site (undated) has traced the history – "rise and fall" - of middle schools in the United Kingdom, expressed as follows:

> Middle schools in the United Kingdom have had something of a chequered history. Observers in the late 1960s might reasonably [have] predicted that every child in Britain would eventually pass through a Middle School at some point in his [sic] career. But this was not to be. Reaching their peak in the early 1980s, Middle School numbers have fallen from nearly 2000 to under 400 in recent years. …
>
> Despite the history of preparatory schools in the independent sector which have long separated classes at the age of 13, Middle Schools are a relatively new phenomenon in the English state education system, with even the oldest having a history dating back no more than 40 years. In fact, until the mid-1960s, Middle Schools as we now know them were effectively illegal.
>
> It could be said that the first step towards a Middle School, was the introduction of a three-tier system in the county of Leicestershire in 1957. This however, did not introduce Middle Schools. It served only to break Secondary education into two phases. Even today, many schools in that county are High Schools for 11 to 14 year-olds and Colleges for 14 to 18 year olds. …
>
> In 1963, the West Riding County Council in Yorkshire presented a proposal to introduce Middle Schools in an attempt to reorganise the authority's provision along comprehensive lines. … [this] proposal was for First schools for pupils up to the age of 9, Middle Schools for 9 to 13 year-olds, and High Schools for the 13+ age range. This allowed existing buildings to be converted to comprehensives for the top range.
>
> Until 1964, schools were required to provide for either Primary or Secondary pupils. The former being those pupils who were aged up to 10½, the latter providing for pupils aged 12 and over. Pupils were therefore required to transfer from one type to the other between those ages – which meant an age of transfer at 11, as had been the case since 1926. This changed in the 1964 Education Act, where provision was made for schools with different ages of transfer. However, no specific provision for categorisation of Middle schools was made. For funding, and statistical purposes, schools still had to be categorised as either Primary or Secondary Schools. Consequently, those which took children up to age 12 were "deemed Primary" while those with older pupils normally "deemed Secondary". …
>
> The growth of Middle Schools would likely have been slow (although perhaps sustained) had it not been for the other great factors in the late 1960s - comprehensive schooling, and the Raising of School Leaving age to 16 by 1973. The push for comprehensive schooling was led by the Labour government. Its Circular (10/65) invited local education authorities to put forward proposals to reorganise their provision to provide comprehensive secondary education. The circular included a number of options, including the introduction of Middle Schools. Alongside this, the need for authorities to find space for an additional year group of pupils by 1973 led to a range of different solutions, including Middle Schools with a variety of ages of transfer.

> While it is now mainly agreed that these factors had been the driving force behind change in the 1960s and 1970s, one other factor gave the process some added validity. In 1967, the Central Advisory Council for Education produced its report into Primary Education. Known as the Plowden Report, it recommended to the government that it seek to promote Middle Schools, and indeed standardise transfer at age 12. It argued that an extension of the good work taking place in Junior schools was to be commended, and that the government should fix a standardised age of transfer. (Its recommendation was age 12, although it proposed that age 13 was feasible). While the government did not oppose the introduction of Middle Schools, it did little to encourage it, and as such, the schools appeared in a variety of forms, as suited each authority. …
>
> The years following the report saw Middle School numbers soar from under 100 to over 1000 by 1974 (following the raising of School Leaving age). Numbers continued to grow in the late 1970s with over 1800 Middle Schools open in 1981 in nearly 50 Local Education Authority areas from Devon to Northumberland.
>
> The patchy way in which the schools developed led to a variety of provision that exists still today. Combined with the reorganisation of local government in 1974, this meant that some education authorities had pupils transferring between one type of school and another at every age from 7 to 13. …

As is the case with other countries where there is great diversity in the configuration of middle schools, to say nothing of the actual *middle schooling* philosophy and approach adopted across and within these types, researching the impacts of *middle schooling* in comparison with traditional approaches is fraught with difficulty. In the case of Britain, other changes in education conspired to undermine the growth of middle schools (UK Middle Schools Web site):

> … 1981 saw the first large scale closures of Middle Schools. Falling rolls across the secondary sector led authorities to examine their provision. To maintain viable Upper or High Schools it was sometimes deemed necessary and/or desirable to return to a two-tier structure.
>
> The gradual decline was given a boost in the late 1980s with the introduction of the National Curriculum. The Curriculum is divided into 4 clear sections, known as Key Stages. Each of these aligns with the traditional splits in schooling. Key Stage One, for pupils aged 5 to 7, aligned with Infant Schools, Key Stage Two with Junior Schools (ages 7-11) with Key Stages 3 and 4 representing the Secondary sector – the latter dealing with examination years. The implementation of both the curriculum, and the associated end-of-Key-Stage testing arrangements led yet more authorities to reorganise their provision, often disbanding Middle Schools and returning to the traditional Primary/Secondary split.
>
> By 1999 numbers had fallen back to the levels seen before the Raising of School Leaving Age with around 550 schools open. By 2005 this had fallen again. In September 2005, just 361 Middle Schools are due to start a new academic year – fewer than at any time since 1971. The number looks set to fall yet further. If all of the authorities which currently have plans to withdraw Middle Schools achieve their aims, by 2010 there could be as few as 150 Middle Schools remaining.

Other reasons for the decline in middle schools in the UK (predominantly England and Wales; there were only ever two middle schools in Scotland and both closed in the 1980s) include:

- Insufficient and declining student numbers in middle schools;
- Concern over educational standards in middle schools; and
- Financial concerns over maintaining a 'third-tier' of education.

However, the closures and changes were not universally supported, with the feeling amongst some parent, community and professional groups that the closure of middle schools had not been accompanied by sufficient consultation or research into the efficacy or otherwise of middle schools.

One such study into middle school effectiveness was funded by the National Middle School Forum (NMSF), a middle school association, come lobby group.[15] The study was undertaken on behalf of the NMSF by Keele University and completed in 1998. The study utilised Office for Standards in Education (OfSTED) data, a school questionnaire and a pupil attitudinal survey. The study undertaken by Keele University academics considered (1998, np):

- progress in core subjects;
- quality of teaching and learning;
- pupil attitudes to learning;
- range and quality of facilities; and
- staff subject expertise.

Overall, the reported performance comparisons for middle schools made with traditional two-tier education slightly favoured middle schools. OfSTED data were used to compare primary, middle deemed Primary (MDP), Middle deemed Secondary (MDS) and secondary student performance data. At Key stages (KS) 2 and 3, the following pattern of results were reported in the study:

- At Key Stage 2 (KS2), average pupil achievement in MDS is graded higher than in other forms of schooling for all core subjects. This pattern is still evident at KS3, however, in both cases the differences are often small and close to the margins of error for the data.
- At Key Stage 2 (KS2) OfSTED data for general school matters shows a mixed pattern of strengths and weakness for all forms of schooling with middle schools performing particularly well in terms of the 'content, breadth and balance of the curriculum' and showing slightly better pupil 'progress'.
- At Key Stage 3 (KS3) OfSTED data for general school matters shows a mixed pattern of strengths and weakness for all forms of schooling although a higher percentage of middle schools are reported as having satisfactory or better 'expectations' and 'accommodation' than other forms of KS3 schooling.
- The grades awarded to all forms of middle schools for 'ethos' are significantly higher than those for secondary schooling and as good as, or better than those for primary schools.
- 98% of middle schools are considered by OfSTED to give 'satisfactory' or better value for money.

[15] "The NMSF is the only organisation that represents the interests and aspirations of middle school head teachers, staff, pupils and governors. As 'The Voice of Middle Schools' we have contacts with many national bodies such as QCA; TTA; OfSTED; House of Commons Select Committee (Education) and, of course, LEAs both inside and outside the U.K."

"The provision of a support group to all middle schools is a key role of the Forum. Our annual conference gives us the opportunity to discuss the common issues of the day and further develop our national network. We provide high-quality, informed support for all middle schools through the Forum's website, through the work of the Steering Committee and through the support offered by the Executive Officer." (NMSF web site - http://www.middleschools.org.uk/index.php).

In the pupil attitudinal survey, completed by 8795 pupils in 52 middle schools drawn from 18 different Local Education Authorities, the following findings were reported:

> From the responses of Middle School pupils … a gentle deterioration in pupil attitude to school can be identified as the young people progress through the system. There is a generally more positive attitude among the girls than among the boys... Taking the survey questions as a group, however, it is possible to identify broad patterns of response which are consistent within year groups and school systems, and others which are consistent between year groups and school systems. These include the following:
>
> - differences in pupil response to individual questions, are of insufficient magnitude to suggest that one school system is more or less effective than another in promoting a positive pupil view. There is, in most cases, a response difference between phases and sectors of education no greater than the probable margin for error in each question asked.
> - responses from Years 5 and 6 in Middle Schools (deemed secondary) are marginally more positive than responses from Years 5 and 6 in primary schools.
> - responses from Years 5 and 6 in primary schools are marginally more positive than responses from Years 5 and 6 in Middle Schools (deemed primary).
> - in Years 5 and 6, there are consistent, small difference in the number of positive responses given, by Middle School pupils from different levels of educational achievement (LEA's). Pupils in LEA 3 provide the most positive responses and those in LEA 1 the least positive.
> - responses from Year 7 pupils in secondary schools are marginally more positive overall than responses from Year 7 pupils in Middle Schools.
> - responses from Year 7 pupils in Middle Schools (deemed secondary) are marginally more positive than responses from Year 7 pupils in Middle Schools (deemed primary).
> - in secondary schools and those Middle Schools which include Year 8 pupils, there is a 'dip' in pupil attitude between Years 7 and 8. This 'dip' is less pronounced in Middle Schools than in secondary schools.

4.4 Australia

During the last 20 years there has been an increasing focus on the middle years and *middle schooling* in Australia. Numerous reports have identified student alienation and disengagement as contributing to under-achievement by many students in the middle years.[16] As a result, most state and territory governments and educational systems have developed and implemented middle school programs, rather than middle schools *per se*.

Despite the focus on *middle schooling* across government Catholic and independent school sectors, there are relatively few distinct middle schools in Australia, with the majority of these being in the non-government sector. Most *middle schooling* initiatives in government schools are carried out within existing secondary or P/K-12 school structures. Apart from several exceptions that provide middle years schooling for

[16] See, for example, Luke, Elkins et al. (2003). The most recent evidence for such claims derives from a national survey among 11,526 students in 81 schools, and responses from teachers on 6,860 students in 73 of these same schools. For specific details, see Bernard, Stephanou and Urbach (2007).

students in Years 6-8, few middle schools consist merely of Years 5 or 6 students (10-12 year olds).

To the best of our knowledge, there has been only one empirical Australian study that has attempted to identify 'effective practice' in *middle schooling* (see Hill, Jane et al., 2002). From this three-year longitudinal study known as the Middle Years Research and Development (MYRAD) Project, the findings were mixed in terms of student achievement and attitude outcomes, but showed that positive advances are made when:

- schools and their communities recognise that there is a need for change;
- school leaders and teachers believe that they have a responsibility for sustaining motivation and improving skills of teachers and students respectively;
- primary and secondary schools collaborate through clusters to build curriculum consistency and facilitate student transition;
- professional learning teams are established to support teachers to plan, implement and evaluate school change;
- reforms are supported by targeted increases in resources;
- data-informed, evidence-based approaches to instructional effectiveness and school improvement are adopted; [17]and
- three-year action plans and targets are established and tested against data.

The findings indicated that the MYRAD experience at least focused participating school leaders and teachers attention on the value of:

- co-operation, consistency and partnership between primary and secondary teachers/schools;
- sustained system support;
- resourcing and support across all levels — school, cluster, regions, centre and the University of Melbourne;
- use of a whole-school design model and a set of strategic intentions as a conceptual guide;
- securing a whole-school commitment;
- data-informed, evidence-based, evaluative approach; and
- investment in teacher professional development.

However, the findings indicated the need for:

- fundamental reconceptualisation of learning and development of shared understanding within each school of the need for meaning and implications of this;
- focus on the teaching-learning practices in the classroom;
- profound, continuing professional development of teachers;
- profound, on-going professional development of leaders to enhance staff and student learning;
- reduction of crowded curriculum to enable depth of understanding;
- system to support and press for, but not mandate, change; and

[17] The value of being data-informed via findings from evidence-based research to support both student and teacher learning (as well as for overall school improvement) is documented by Matters (2006); Rowe (2005c); Visscher and Coe (2002, 2003).

- understanding that fundamental change is not likely to be achieved quickly or easily.

A subsequent review of *middle schooling* in Australia, *Beyond the Middle* (Luke, Elkins et al., 2003) commissioned by the Australian Government Department of Education, Science and Training, represents one of the most significant reviews of *middle schooling* carried out anywhere in the world. With a particular focus on literacy and numeracy achievement outcomes in the middle years, the report concluded that *middle schooling* in Australia was something of an unfinished project. In broad terms, the report found (7-10):

a) There is a need for a new generation of middle years conceptualisation and research on student pathways;
b) There is a need to fund a co-operative, multi-partner professional development strategy on middle years school innovation;
c) There is a need to focus systemic activities on renewing mainstream pedagogy in middle years schooling;
d) There is a need to align school-based innovations in middle years pedagogy and assessment to focus on student outcomes;
e) There is a need to integrate and align approaches to assessing and reporting on social and academic student outcomes;
f) There is a need to commission research into patterns of school leadership for the middle years that sustain improved student outcomes; and
g) There is a need to support and research distinctive middle years teacher education programs and career pathways.

Most of the reviews of *middle schooling* in Australia have identified a dearth of evidence for the effects of *middle schooling* on personal, social and academic student outcomes. The Northern Territory Council of Government School Organisations (2005: 3) found:

> There is little research evidence available in Australia on the effect of middle schooling on student outcomes. Most of the numerous studies published consist of advocacy or focus on student and teacher attitudes rather than actual outcomes for students. Little data has been collected on the effect on student achievement.
>
> The research studies generally show that teachers believe that the introduction of middle schooling practices has improved student engagement and attitudes to learning. There is also evidence of gradual change in teaching practices.
>
> Few research studies have been conducted in Australia or elsewhere on specific practices associated with middle schooling and few have been conducted on a sound methodological basis.

A number of Australian reports and reviews into *middle schooling* in Australia offer the view that the 'first wave' or 'first generation' of *middle schooling* dating from the 1980s to 1990s was characterised by great enthusiasm, advocacy and developmental work. However, many of the middle school initiatives were *ad hoc,* localised, fragmented, 'grab bags' of strategies; undocumented, unevaluated, and with little evidence of impact on student achievement. Funding arrangements meant that certain groups were targeted for attention, and thus initiatives were sometimes 'bolted on' to existing primary/secondary structures rather than embedded in purpose designed middle schools (NT COGSO, 2005: 15; Luke et al., 2003: 135).

There has been a view commonly expressed in Australian reports on *middle schooling* since the turn of the 21st century, that there is a degree of change and innovation fatigue resulting from the first 'wave' of *middle schooling* reform. The consensus is that the next phase needs to be conducted in a more systematic, coordinated, evidence-based manner, supported by more substantial government funding and teacher professional development. In respect of the latter, it is only in the period since 2002 that specialised pre-service teacher training for the middle years has become available in Australia (Pendergast, 2005: 12), although some teacher registration boards and authorities have yet to recognise this specialisation. In-service training for teachers of the middle years is also seen to be holding back change in *middle schooling* (NT COGSO, 2005: 18).

In his review of *middle schooling* in Australia Prosser (2006: 10) concluded:

> The first generation of middle schooling in Australia left business unfinished, especially in relation to the impact of poverty and disadvantage on differential outcomes for students and the need for greater teacher involvement in efforts for middle school reform. These continuing challenges must not be overlooked in a second generation of middle schooling in Australia.

Some of the key concerns identified for the middle years are worth examination in more detail.

4.5 Section Summary

Despite more than a century of debate and discussion, middle school education has been slow to develop in New Zealand, but New Zealand is unusual in having Intermediate schools catering for years seven and eight.

The establishment of Years 7 to 10 middle schools in New Zealand has been resisted by some professional associations.

The low academic performance of some Māori and Pacifika students in the middle years has focused attention on pedagogical approaches for students from these backgrounds. Lower academic expectations and insufficient engagement by teachers with Māori and Pacifika students and their cultural contexts have been found to be problematic.

It is important to note that there can be wide variation in student achievement in schools with predominantly Māori and Pacifika students. This is largely explained by variation in teaching quality at the class-level, rather than students' socio-cultural backgrounds.

Overall, the research evidence on middle schooling in the USA, where around 20 million 10 to 15 year-old American students are enrolled, is mixed and uneven. There have been concerns that societal and demographic pressures rather than evidence has led to the development of separate schools for young teens. However, additional transitions have been found by some studies to be problematic. Latinos and African-Americans pre-dominate in US middle schools with Anglo and other higher socio-economic groups tend to shun middle schools.

There has been a diversity of approaches to middle schools in the UK. However middle schools have declined from nearly 2000 in the early 1980s to under 400 in recent years, with this decline continuing. Factors since 1988 such as the introduction of National Curriculum and National Assessment, concerns over educational standards in middle schools, and financial concerns over maintaining a third tier of educational provision have all influenced this decline. Again, evidence for the efficacy of middle schools and middle schooling approaches is lacking in the UK.

In Australia, there has been an increasing focus on middle schooling over the past 20 years. However the establishment of purpose-built middle schools has largely been confined to the non-government sector. Once again the reviews of middle schooling in Australia have identified a dearth of evidence for the effects of middle schools than middle schooling approaches on personal, social and academic achievement outcomes. There is a feeling in the Australian literature that a new wave of middle schooling initiatives need to take place as the movement has tended to lose momentum in recent times.

5.0 KEY CONCERNS OF MIDDLE SCHOOLING

5.1 The Primary-Secondary Transition

One of the major concerns underpinning *middle schooling* is that of the primary to secondary transition. At its most basic, this transition typically comprises a change of school and a change from a generalist class teacher in a 'home room' to a range of specialist teachers and subjects at a larger school site with older, adolescent to adult students.

As noted earlier, it is important to recognise that not all students will find the transition from primary to secondary school problematic. Many will experience little difficulty in adjustment and will relish the change. With this in mind, the following potential issues for transitioning students have been identified in the literature (ACT DET, 2005: 9-10):

- Loss of a role model or key adult;
- Loss of trust and diminished responsibility;
- Decline in attitude, motivation and interest;
- Loss of sense of belonging and status; and
- Environmental changes from closeted 'childish/feminine' to independent 'adult/masculine'.

In respect of teaching and learning contexts according to the ACT DET report (2005: 9-10), for example, the primary to secondary transition can involve change from:

- A small school to a large school;
- An integrated classroom style to a school organised in curriculum areas;
- Being one of the oldest students to one of the youngest;
- A close relationship with one teacher to a less close relationship with many teachers;
- Having much responsibility and leadership to less or no responsibility and leadership;
- Being attached to one classroom to moving between classrooms and having to take responsibility for being in the right place at the right time;
- Interacting with a small group of peers to interacting with a large group of peers;
- A teaching and learning environment requiring few organisational skills to one demanding many, e.g., coordinating assessment tasks from a number of teachers;
- A classroom environment where one subject may flow into another and where activities can be completed to one which is more fragmented; and
- Particular pedagogical approaches and assessment styles to significantly different ones.

Paradoxically, while beginning secondary students might be fearful of the workload and difficulty associated with secondary schooling, there is evidence that there can be a drop in expectations and standards from primary to the early secondary years, with beginning high school students being 'pulled down' and/or 'held' back.

At virtually every transition point in education, there is a tendency to underestimate what students can already do, and what they have already achieved. Students who were engaging in high level activities in their primary years (such as designing web pages) can be stifled by lower standards and challenges when they reach high school ('this is a computer and this is how to turn it on'), with disengagement, boredom and behavioural problems as possible outcomes (Aubusson, Brady & Dinham, 2005; Dinham, 2005; Dinham, 2007a).

The middle school years are also the time when some students engage more fully with learning and make great strides in educational attainment. For others who disengage, the achievement gaps which were already wide in upper primary schooling can be substantial by the end of junior secondary education. This is especially the case for particular groups of students such as the economically disadvantaged and those from backgrounds where, for example, there are low levels of literacy in the home and poor family health (see Wylie & Hodgen, 2007).

A sizeable proportion of students in many countries, including New Zealand, leave school at the minimum schooling age and without completing the upper secondary years. These problems of disengagement, underachievement and withdrawal from schooling are seen to particularly affect boys, those from poorer economic circumstances, and in New Zealand, Māori and Pasifika young people (Wylie & Hodgen, 2007: 18-21).

In its review, the ACT DET report (2005: 10) into *middle schooling* underlined such variation in student achievement as follows:

> Although these are the issues that many students are initially confronted with *at the point of* transition between schools, they are physically, emotionally and socially going through a transition that lasts for many years.
>
> Whilst many students find these changes demanding, others thrive on the challenges that the changes create. National research indicates there is a marked middle years slump in student outcomes, including literacy, numeracy, and engagement … Data collected in the ACT about students' literacy and numeracy results at years seven and nine demonstrates that, for many students, there are no major implications for their learning in these areas of the curriculum.

There are many effective transition and 'linkage programs' designed to smooth the way from primary to high school which have been developed in recent years (ACT DET, 2005: 10-11; Aubusson, Brady & Dinham, 2005), although whether such programs have any impact on student achievement is questionable (ACT DET, 2005: 11). It is possible that the main outcomes of such programs are a reduction in initial anxiety on the part of students, and possibly, their parents, concerning the transition.

It must be said that some secondary schools and teachers have been characterised by a superior attitude to their primary colleagues, with reluctance to finding more about primary curricula, teaching and learning, past student capability and performance. As a result of this stance, tracking of student performance can be poor, assigned work can be either too difficult or too easy for students, work previously covered in primary school is repeated ('we did this in year 5'), and false assumptions can be made about what students know and can do (2007a).

Finally, there is an irony in the discussion of transitions in the *middle schooling* literature. There is general agreement that transition from school to school and the requisite adjustment and change this entails can be problematic for some students.

However in most cases, creating separate middle schools *adds* a transition for students attending such schools, although New Zealand already has a three-tier system.

5.2 Literacy and Numeracy in the Middle Years

Literacy

While, ideally, the middle years should be marked by growing independence and competence in literacy, the reality for many young people is the reverse. Maclean (2005: 104) has noted that although many students in the middle years:

> … learn to see their writing from the reader's point of view and to write in interesting and informative ways for a wide audience.
>
> … the middle years are also a problematic time for literacy learning. Achievement in literacy for many tends to plateau or go backwards, and the gap between good and poor readers grows ever wider. Many learners disengage from literacy, and do not read and write even if they are able to. The reasons for these problems are varied. Some students who read successfully in the early years are unable to cope with the increased demands of middle years literacy. … The reading and writing tasks typically encountered in secondary classrooms are more fragmented and less interesting than in upper primary school … Many lessons do not have a purpose which is clear to either the students or the teacher, and have no connection to students' backgrounds or interests. There is a lack of intellectual depth, challenge and rigour, and a lack of the focused teaching of skills and strategies which students need to complete the tasks set for them.

Consistent with findings and recommendations from the 2004-2005 Australian Government's *National Inquiry into the Teaching of Literacy* (see Rowe, 2005a,b; 2006a), a variety of approaches to literacy teaching and learning has been advocated and these are briefly outlined below. One of the beliefs underpinning literacy in the middle years is that the concept of *middle schooling*, if fully enacted, will enhance the likelihood of success of these approaches.

Maclean (2005: 104-112) observes that approaches to middle years literacy include:

- Sentence rewriting and sentence combining;
- Forming paragraphs through students 'bundling' ideas about a topic;
- Helping students to identify underlying relationships between paragraphs;
- Teaching techniques like plot graphs, character profiles, response journals;
- Analysis of advertising;
- Using plot devices in writing, e.g., suspense, quests, puzzles, misunderstandings;
- Knowledge of text types and genres;
- Spoken language genres, e.g., reports, interviews, debates.
- Factual genres, e.g., photos, illustrations, icons, diagrams, full colour design;
- Multiliteracies, i.e., becoming expert in a range of mediums, e.g., spoken language, sound, body language, film, illustration, online and digital texts;
- 'Metamedia literacies', i.e., controlling these literacies, e.g., through a PowerPoint slide where students control print, layout, illustration, colour, animation, sound; and

- Visual literacy, i.e., how images and visual designs are organised, are presented to the viewer, and how types and styles of visual design match types and styles of written text.

Meiers (2007) reviewed the K-12 research literature on writing and notes:

> Research shows that writing also plays a key role in learning, and that writing to learn is not the same thing as writing to communicate, or to demonstrate learning. Writing helps students to make connections between what they read, view and hear, and what they think and understand. Writing to learn provides a significant tool that strengthens reading comprehension, and enables students to reflect on and question information and ideas. Writing-to-learn strategies help students to become more active learners. Currently there is widespread interest in the effects of writing on learning. This is often described as 'writing-to-learn', and is linked to what is sometimes called 'writing across the curriculum'.

Meiers (2007: 5) cites a major meta-analysis by Bangert-Downs, Hurley and Wilkinson (2004) who concluded:

1. Writing to learn typically produced small, positive effects on school achievement;
2. Grade level, minutes per writing assignment, and presence of prompts for metacognitive reflection moderated writing-to-learn achievement effects; and
3. Treatment length may moderate writing-to-learn effects, suggesting that the influence is cumulative over time.

Further, Meiers (2007: 6-7) provides a number of suggested writing-to-learn strategies:

Short in-class writing -

- Entrance and exit slips;
- Written conversations; and
- Self-assessments.

Ongoing projects -

- Journals and learning logs; and
- Double entry journals.

Other strategies include using scrapbooks of various artefacts of the learning process, blogs, chats and online discussion forums, and letter-writing exchanges.

In terms of how to teach literacy in the middle years, Maclean (2005: 118) offers the following comments and suggestions:

> Only by working on several parallel fronts can teachers meet the challenges of middle years literacy. Teachers design units of work and activities that integrate print, sound, illustration and visual design, that are purposeful, engaging and relevant, and that lead students to critique and transform their social worlds. Within the context of these units, skills and strategies are taught at the point of need that help students to achieve their immediate goals and that also help them to be more independent readers and writers.

Once again, the above represents a worthy aim, although it remains to be demonstrated if these measures, if implemented, would result in turning around the decline in literacy experienced by some students, and enhancing the literacy of students who 'plateau' in the middle years.

Numeracy

There are many definitions of numeracy and views on what being numerate encompasses (see Doig & Rowe, 2002: Thomson et al., 2005). While numeracy is undoubtedly linked closely to mathematics, like literacy, it is considered the responsibility of every teacher. In respect of *middle schooling*, Dole (2005: 122-123) has commented:

> One of the key aspects of numeracy that does, however, relate directly to the teaching and learning of mathematics, is the importance of having a positive disposition to using mathematics….
>
> Assisting mathematics-anxious students to overcome their fear of mathematics, and focusing on reducing the incidence of such fear, must be the responsibility of teachers of mathematics. However, in the middle years of schooling, school mathematics, and thus the development of numeracy, is challenged by students' disposition towards the study of mathematics, and often schooling in general.

The 'traditional' teaching of mathematics ('drill and skill')[18] is seen to be the cause of student disengagement and disinterest in mathematics, and resultant disruptive behaviour. A further issue is that classroom gaps in mathematical ability and achievement can widen dramatically in the middle years, with a seven year gap between the lowest and highest performing students in any classroom being common by year 10 (Dole, 2005: 123).

In a study of Australian public schools in the State of New South Wales where exceptional student outcomes were found to be occurring in Years 7-10, and carried out as part of the ÆSOP project (*An Exceptional Schooling Outcomes Project*), Pegg, Lynch and Panizzon (2007: 97-107) found the following common themes or elements in the seven mathematics faculties selected for study. It should be noted that none of the schools concerned was a middle school:

> *About the School* – within the schools visited there were procedures and policies in place to allow faculties to thrive. There are four elements to this theme.
>
> - The first concerns a mission to attain high educational outcomes for all students in the school. In essence, this refers to placing student learning at the centre of the school's focus and seeing other activities as existing to support this. …
> - The second element involves members of the Executive carrying out their role in a competent, capable and supportive manner …
> - Associated with capable school leadership were sound organisational and administrative structures. Many of these structures are concerned with disciplinary issues or codes of behaviour. …
> - Finally, all schools placed a strong practical emphasis on student welfare and support … these programs became enablers to assist in breaking down barriers that might impede students achieving their potential …
>
> *About the Faculty* – three themes concern the faculty:
>
> - a strong sense of team,
> - a strong sense of professionalism, and
> - a testing/assessment regime as a catalyst for teacher cohesion.
>
> *About Teachers and Teaching* – three themes concern teachers and teaching:
>
> - solid teaching evident

[18] Disparaged by some as 'drill and kill'.

- effective classroom management, and
- care for students and their learning.

Pegg, Lynch et al. (2007: 105) found that the teachers in the maths faculties were experienced, passionate about mathematics, and cohesive. The teaching of mathematics in Years 7-10 in the seven successful faculties could be characterised as 'the fundamentals done well'. A key finding was:

> … the critical value of the faculty working as a professional team, as a community of professionals. Teachers, while still maintaining their individuality, are a collective that work and share and, most importantly, learn together to seek improvement in teaching for themselves and their colleagues. The teachers in these faculties collectively established a standard of which everyone was aware. They set the mark so that all students had a chance to achieve and feel genuine success. They cared for their students as individuals and they endeavoured to meet the different needs of individual students.

Dole (2005: 123-132) identified a number of "strategies that have been successful in promoting numeracy in the middle years":

> *Withdrawal*
>
> One of the common approaches to 'promoting numeracy' is to withdraw students from the regular mathematics classroom and provide them with a program to promote knowledge and understanding of 'the basics' …
>
> The withdrawal approach does suit some learners, however, as they begin to experience success through repetitive practice of algorithmic procedures with consequent reduction in mathematics anxiety. But in a withdrawal mode, the individual is missing out on the mathematics lessons being undertaken by the rest of the class …
>
> Another way of catering to the mathematical needs of students in the middle years is to stream classes … [However in one study] Students in the lower stream openly admitted that they were in the 'dummy' class, and expressed feelings of low self-esteem with respect to their potential achievement in mathematics. These students also presented more challenging classroom behaviours … [despite other intentions] instruction in the bottom stream typically reverts to a 'skill and drill' program.
>
> *Whole-school approach*
>
> Whole-school approaches to middle years have been found to be most successful in promoting learning outcomes in general … A whole-school approach to numeracy has been found to be successful for learners in the middle years, particularly those deemed at risk … The features of such programs are their alignment with middle years philosophy – meaningful activities linked to the life worlds of the students, mathematical skill and conceptual knowledge development embedded in life-related problem-solving tasks, group work, encouragement of student discourse, together with a team approach to planning and teaching.
>
> In whole-school approaches to numeracy, teachers are in a position to reflect more critically upon their practice, to question the positive and negative aspects of traditional methods, while trialling new ideas and strategies.
>
> *Integrated curriculum*
>
> Middle years principles advocate an integrated curriculum. With respect to mathematics, the promise for students is that the study of mathematics may occur in a repackaged and more palatable form.
>
> An integrated approach underpins the New Basics reform … being trialled in schools in Queensland, where risk tasks are the focus of investigation by students, necessitating an integrated and team-based approach to be undertaken by teachers …

> To ensure an integrated curriculum meets the numeracy needs of students in the middle years, expert teachers of mathematics are required.
>
> *Reframing classroom practice*
>
> To promote numeracy through the teaching of mathematics requires new approaches in the mathematics curriculum. As whole school numeracy, and an integrated approach require considerable collaboration and support, individual teachers can consider new ideas and approaches to teaching mathematics in their own classrooms without necessarily having to work with others. …
>
> [However] Professional development of teachers to promote numeracy clearly remains an ongoing need.
>
> *Critical numeracy*
>
> … Critical numeracy, like critical literacy, is to use mathematical skills and knowledge to make informed decisions, to become aware of underlying and covert messages that may be enveloped in mathematical terms, texts, diagrams, and/or jargon … Critical numeracy is linked to the notion of empowerment and, beyond basic skills, this must be a goal of numeracy programs.

5.3 The Issue of Student Engagement

Student engagement, or the lack of it, is frequently perceived as an effect of teaching. As noted previously, one of the stated concerns with schooling in the middle years is the decline in engagement and even disconnection with schooling that can occur for some students, and its resultant effects. A lack of engagement is sometimes labelled 'alienation', although there is disagreement on this point, with some commentators believing 'alienation' to be a product or outcome of schooling practices in its own right, rather than being the absence of engagement.

As with other educational terminology, looseness of definition can be problematic. Student engagement is sometimes conflated with 'time on task' and lesson participation, although generally, 'engagement' is taken to be a wider outcome of schooling to do with school life, and not just something occurring in individual lessons.

Fullarton (2002) reported on a study of student engagement in the Longitudinal Surveys of Australian Youth (LSAY) project. Data were obtained from an Australian national sample of Year 10 students. *Engagement* in this study was defined using Finn's (1989) taxonomy of engagement, or participatory behaviours, which considers students' levels of participation in extracurricular activities available to them in their schools. Fullarton (2002: v) noted :

> Finn (1989) argued that with such participation comes identification with the school, a 'belonging' that can help promote a feeling of self-worth and assist students to become resilient learners, particularly if they are part of a group at risk of leaving school before completing Year 12. Participation in extracurricular activities has been described as providing all students with an educational safety net, and several US studies have found participation to be positively related to a range of positive educational outcomes.

Major findings from the national study of Year 10 students (Fullarton, 2002: v) were:

- Females had higher engagement levels than males … in all school sectors and achievement levels;
- Students from higher socio-economic backgrounds and those with professional parents had the highest levels of engagement within the school;

- Students from independent schools had higher levels of engagement than those in Catholic schools, who in turn were more highly engaged than those in government schools;
- Students who plan on enrolling in tertiary study were more highly engaged than those who planned to leave school and go to work;
- Students at single-sex schools were more highly engaged than those at co-educational schools;
- Levels of engagement were found to be higher where students believed that their school had a good climate, that is one where they have high quality teachers, effective discipline, high levels of student learning and a positive school spirit;
- Students who were generally happy with school and with learning … were more engaged than those who were not; and
- Students who were intrinsically motivated were found to be more engaged than those who were not so intrinsically motivated.

Additional findings from the LSAY project included:

- Between-school differences account for almost 9 per cent of the variation in students' engagement levels. While this is not large, it is significant, and indicates that it *does* matter what school a child attends; and
- The overall level of student engagement in the school was a strong predictor of student-level engagement. High engagement at the school level … was found to moderate the negative effects of socio-economic status and indigenous status. This finding indicates that the school environment has an important influence on student engagement.

There were significant differences between male and female engagement, with resultant implications (Fullarton, 2002: vii):

> For males, attention in schools needs to be paid to classroom and school climate. Males appear to need more of a supportive school and classroom environment to be engaged with their school. They need to be strongly encouraged by their schools and by their parents to participate in extracurricular activities, and a broader range of activities developed by schools that are appealing to young males.
>
> For females, schools need to focus on developing a strong self-concept of ability and positive views of school climate. Whilst for males, parents' educational level, and for females, socio-economic status, are not malleable, their effects are small compared to the effects of overall high levels of student engagement.

Overall, the LSAY report found that the school a student attends does matter when it comes to engagement. This is partly a result of resources and advantage – wealthier schools can offer a greater amount and variety of extracurricular activities – but the efforts made by schools and the emphasis that is placed on extracurricular activity is also important. Strong participation in such activities more closely connects students to the school and "…it is argued in the report that there are 'flow-on' effects to more academic parts of the curriculum" (Fullerton, 2002: vii).

Smyth and Fasoli (2007: 274) make the point that current efforts to reform education can actually work against student engagement:

> There is a dilemma when it comes to reforming schools in ways that improve learning - there is a growing mismatch between formal educational policy in terms of what is required, on the one hand, and what is likely to work at the school and classroom level, on the other hand. There is increasing evidence that schools internationally are not meeting the needs of growing numbers of young people, especially those at the secondary level. The evidence is that significant numbers of

> young people are becoming disengaged from, and dropping out of school … For those young people whose backgrounds have placed them at 'disadvantage', the statistics are even more disturbing.
>
> The official educational policy response to these trends has been an increase in approaches that emphasize accountability, increased reporting to parents, more testing, performance aimed at meeting standards and targets, greater parental choice of schools and, in general, a more prescriptive curriculum and modes of assessment

5.4 Higher-Order Thinking

Higher-order thinking is a frequently cited desirable outcome of effective middle years schooling. Higher-order thinking is implicit in models and frameworks such as in Education Queensland's *New Basics* and *Productive Pedagogies* (2002) and the NSW DET's *NSW Model of Pedagogy* (NSW DET, 2003).

Higher-order thinking is one of the *Productive Pedagogies*. The *New Basics* website (Queensland Government, 2002) defines higher and lower order thinking thus:

> *Higher-order thinking* requires students to manipulate information and ideas in ways that transform their meaning and implications. This transformation occurs when students combine facts and ideas in order to synthesise, generalise, explain, hypothesise or arrive at some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems and discover new (for them) meanings and understandings. When students engage in the construction of knowledge, an element of uncertainty is introduced into the instructional process and makes instructional outcomes not always predictable; i.e., the teacher is not certain what will be produced by students. In helping students become producers of knowledge, the teacher's main instructional task is to create activities or environments that allow them opportunities to engage in higher-order thinking.
>
> *Lower-order thinking* occurs when students are asked to receive or recite factual information or to employ rules and algorithms through repetitive routines. Students are given pre-specified knowledge ranging from simple facts and information to more complex concepts. Such knowledge is conveyed to students through a reading, work sheet, lecture or other direct instructional medium. The instructional process is to simply transmit knowledge or to practise procedural routines. Students are in a similar role when they are reciting previously acquired knowledge; i.e., responding to test-type questions that require recall of pre-specified knowledge. More complex activities still may involve reproducing knowledge when students only need to follow pre-specified steps and routines or employ algorithms in a rote fashion.

According to New Basics, there is a *continuum of practice* between lower and higher-order thinking:

1. Students are engaged only in lower-order thinking; i.e., they either receive, or recite, or participate in routine practice and in no activities during the lesson do students go beyond simple reproduction;
2. Students are primarily engaged in routine lower-order thinking a good share of the lesson. There is at least one significant question or activity in which some students perform some higher-order thinking; and
3. Almost all students, almost all of the time, are engaged in higher-order thinking.

The rationale for teaching higher-order thinking skills in *middle schooling* incorporates both personal and social-economic aspects. Individually, higher-order thinking skills theoretically enhance one's life chances, leading to greater personal fulfilment, financial reward, as well as mental and physical health. Socially and

economically, enhanced higher-order thinking skills enable greater collaboration, innovation and productivity in workplaces and the economy.

A concern with traditional schooling during the middle years is that of too low intellectual demands being placed on students, and the 'dumbing down' of the curriculum. However, virtually every study of effective and successful teaching has identified the importance of high expectations being held by teachers and communicated to students for enhanced achievement progress. A related concern is that traditional schooling neither promotes nor assesses higher-order thinking skills.

As mentioned above, the enhancement and utilisation of higher-order thinking skills lies at the heart of almost all espoused principles and practices of *middle schooling*. Hilton and Hilton (2005: 199) have noted:

> Traditional practices in schools have been described as desk-oriented, with teaching often based around a textbook, and directed at one level, usually the middle ability range. …
>
> The signifying practices associated with middle years schooling attempt to address these concerns by providing alternatives in which students are more actively engaged in learning. …
>
> Problem and performance-based learning, independent projects, cooperative and collaborative learning, and curriculum integration and negotiation are examples of practices designed to encourage active learning and higher-order thinking. …
>
> When such activity is missing from the classroom, students are deskilled because they are exposed to busy work and rote learning, which require no reflection.

A key question in teaching higher-order thinking skills relates to assessment. Should these skills be taught and assessed in isolation? What of 'rich tasks' designed to promote higher-order thinking? What of assessment *for* learning of higher-order thinking skills? Hilton and Hilton (2005: 208) address some of these issues:

> Assessing higher-order thinking is not an easy task. Proponents of teaching thinking skills in isolation from the main curriculum cite ease of evaluation as a major advantage of their method, as it does not get lost in the broader agenda. The fact that this approach does not relate to students' broader curriculum or middle schooling philosophy and therefore has little authenticity would seem to outweigh any assessment advantage.
>
> A more authentic assessment method is the development of criteria sheets, which scaffold and assess students' thinking skill development in the broader context of an integrated curriculum.

Once again, the research for teaching higher-order thinking skills in *middle schooling* contexts is slight and tentative. Some studies report improved motivation, engagement and achievement, although the effects of higher-order thinking skills approaches tend to be conflated with other learner-centred approaches (see Hilton & Hilton, 2005: 209).

5.5 Education for Student Resilience

In the context of *middle schooling* being charged with the responsibility for solving a range of academic, personal and social problems society seems unable or unwilling to deal with (Dinham & Scott, 2000), resilience has been added to the list. Newhouse-Maiden et al. (2005: 77) have commented:

> … teachers, schools and families share a central role in the productive construction of protective assets during the middle years … Research suggests that people who are emotionally resilient, courageous and hopeful are more likely to succeed now and in the future … The types of attributes that appear to reduce vulnerability show a

> striking alignment to the developmental tasks being nurtured during the middle years. … Deliberate educational action targeting the competencies that promote resilience is possible, and arguably ethically demanded, in the middle years of schooling.

Educational systems have advocated the building of resilience through *middle schooling*, the years in which it is seen as most needed (see NSW DET, 2006). Once again, such policies are deficient on the *how* aspects. In this vein, Newhouse-Maiden et al. (2005: 86-87) recommended "a number of principles for resilience building". These, however, also lack detail on how best to achieve what is being advocated, and all require a high level of professional skill on the part of the teacher, not to mention time:

- Avoid promoting achievement goals, instead develop a system for acknowledging the achievement of mastery goals in all areas of endeavour;
- Provide for the development of positive self-concept through opportunities for the development of self-knowledge, particularly of strengths and weaknesses;
- Provide an environment that encourages an internal locus of control;
- Explicitly develop communication and self-help skills. Provide students with opportunities to practise and develop these in a multifaceted way to a high level of skill;
- Encourage a high activity level but not to the exclusion of discretionary time;
- Practise cognitive skills. Explicitly teach problem-solving strategies, scaffolding support, providing scalable worked examples to problems and training in the application of metacognitive processes;
- Discuss coping strategies;
- Proactively establish social networks that cut across age cohorts;
- Expose students to support networks and practise engaging in them through role plays, research activities and community-based activities; and
- Provide opportunities for the sanctioned development of a personal relationship with a positive role model with full regard to the maximisation of the influence of the model.

Schools that are able to establish processes to maximise the potential of relationships between middle school students and their role models will be making a potent contribution to the development of lifelong resilience. As noted, building resilience is believed to promote self-esteem, confidence and autonomy, and to help protect young people from a range of potential dangers including drug and alcohol abuse, anti-social behaviour, bullying, eating disorders, self-harm, suicide and unemployment (see Richardson, 1998).

However, there are concerns over whether the substance of what is being proposed to be taught under the label of resilience is more therapy and social engineering than teaching. A secondary concern is whether teachers have the skills and knowledge (and time) that this form of teaching and learning requires. If not, it is possible that harm to students could result (see Scott, 2007).

5.6 Pedagogy for the Middle Years

An often stated feature of *middle schooling* is the utilisation of pedagogies that are believed to be more suited to the developmental needs and interests of adolescents.

These are commonly taken to be strategies such as 'cooperative learning', greater student involvement in negotiating the curriculum, concentration on materials and skills relevant to middle school age students and their lives, 'discovery learning', 'team teaching', and so forth.

In its review of *middle schooling*, the Northern Territory Council of Government School Organisations (2005: 26) commented:

> Teachers are seen as the key factor in successful middle schools. Classroom pedagogy must respond to the diverse needs and abilities of middle year students. To respond effectively, pedagogy must be flexible, reflecting creative uses of time, space and other resources as well as group and individual needs. It must also be learner-centred with an emphasis on self-directed and co-constructed learning. Flexible classrooms provide every learner with tasks that are engaging and that develop understanding and skills.

A common finding in the published literature, however, is that teachers frequently feel under-prepared and ill-equipped to adopt and utilise these approaches and strategies. This perception reflects the difficulty of teacher preparation generally in the current context. In describing their involvement with teacher training in the USA, Carroll et al. (2007: 1), comment generally about the field:

> As insiders to teacher education, we, too, are critical of much that goes on in our field. We lament the disregard for serious content knowledge, the preoccupation with techniques, the reliance on unexamined practice. We agree that teacher education too frequently promotes unrealistic goals, offers scant intellectual fare, and fails to provide prospective teachers with the tools to realise their aspirations and society's expectations.
>
> We understand why this is so. Immersed for many decades in the difficult work of teacher preparation, we have learned that helping prospective teachers develop sophisticated understandings of subject matter, students' thinking, and the creation and management of classroom learning communities – the whole, complex package – is hard, intellectually demanding work.

A secondary concern is a general lack of middle school specific teacher training, with the result that teachers are attempting to adopt their 'regular' training and teaching styles, either primary or secondary, to middle school settings. A further tension in preparing middle years teachers is achieving the 'right balance' between generalist teaching knowledge (which can work against depth) and subject specialisation, which can work against breadth of curriculum knowledge, pedagogy and understanding. Hill and Russell (1999) advocated that all middle years teachers have an in-depth knowledge of at least two specialist subject areas, a common requirement for 'regular' secondary teachers, but that they also require training for integration of existing subject-area knowledge into special topics or issues. According to Hill and Russell, middle years teachers also require pedagogic knowledge and skills in literacy, numeracy, as well as ICT.

An evaluation of three middle schools in the Australian Capital Territory (Rafiq & Woolnough, 2005: 14) found:

> With respect to 'classroom teaching strategies' there appears to be a strong agreement between principals, parents and teachers. In general, the responses of the students were not very positive in relation to their teachers and teaching practices in the schools. For example, students expressed a very negative perception of the courses they were taught and none of the students reported positively that they worked in small groups. Although teachers felt that teaching strategies such as cooperative learning, team teaching and hands-on activities were well practiced in

> the schools, they felt that they were not trained for meeting the needs of adolescents. In general, there was an agreement between the responses of the schools on all items.
>
> According to the majority of the stakeholders, teachers were engaged in professional working relationships, sharing ideas and developing appropriate instructional programs for students. Staff, however, did not feel that their development was inclusive of the various adolescents' needs. Otherwise, staff felt that they were working as collaborative teams and had a strong sense of belonging and collaboration among themselves. Students had a strong conviction that their teachers had strong knowledge of the content they teach and control over their teaching practices. Regarding teachers' willingness in helping the students with personal problems, the students' perceptions were less positive.

Rafiq and Woolnough (2005: 14-15) concluded that "most of the students held a negative perception of the teaching and learning environment provided in the schools". As a result, they recommended the need for specific pre-service and in-service training for middle school teachers with such training underpinned by an understanding of adolescents' needs. They noted that teachers' enthusiasm for the concept was an issue and that interdisciplinary teaching needed to go further. Overall, what comes through in Rafiq and Woolnough's (2005) evaluation report is a sense that the expectations for middle schools to solve a raft of problems associated with adolescence (bullying and violence, drugs and smoking are mentioned), in addition to facilitating student learning, is unreasonable.

Another key aspect to middle school pedagogy is that of 'discovery learning'. Discovery learning is sometimes labelled cognitive constructivism, or social constructivism, and is seen as "a preferred instructional method" in education, especially during the middle years (Mayer, 2004: 14):

> As constructivism has become the dominant view of how students learn, it may seem obvious to equate active learning with active methods of instruction. Thus, educators who wish to use constructivist methods of instruction are often encouraged to focus on discovery learning – in which students are free to work in a learning environment with little or no guidance. Under the banner of social constructivism, the call for discovery learning remains, but with a modest shift in form – students are expected to work in groups in a learning environment with little or no guidance.

Writing in the *American Psychologist*, Mayer (2004) reviewed research on the discovery of problem-solving rules (which peaked in the 1960s), the discovery of conservation strategies (which peaked in the 1970s), and the discovery of computer programming concepts (which peaked in the in the 1980s). "In each literature, pure discovery methods – in which students have maximal freedom to explore – are compared with guided discovery methods – in which the teacher provides systematic guidance focused on the learning objective" (Mayer, 2004: 15).

As a result of his review of the research literature, Mayer (2004: 17) concluded:

> My historical review of three research literatures – teaching problem-solving rules, teaching conservation strategies, and teaching programming concepts – does not offer support for pure discovery methods. Does this mean that constructivism is wrong? It certainly means that a doctrine-based approach to constructivism does not lead to fruitful educational practice. The research in this brief review shows that the formula *constructivism = hands-on activity* is a formula for educational disaster.
>
> Activity may help promote meaningful learning, but instead of behavioural activity *per se* (e.g., hands-on activity, discussion, and free exploration), the kind of activity that really promotes meaningful learning is cognitive activity (e.g., selecting,

> organizing, and integrating knowledge). Instead of depending solely on learning by doing or learning by discussion, the most genuine approach to constructivist learning is learning by thinking … guidance, structure, and focused goals should not be ignored. This is the consistent and clear lesson of decade after decade of research on the effects of discovery methods.

Mayer (2004: 18) also makes a vital additional point in this review of the research evidence on constructivist-based discovery learning: "The larger message of this article is that psychology has something useful to contribute to the ongoing debate about education reform", believing that psychology has tended to be left out of the debate about how young persons learn – particularly given overwhelming findings from the large body of evidence-based psychological research for the primacy and utility of *direct/explicit* instruction (Ellis, 2005; Hattie, 2003, 2005; Kirschner, Sweller & Clark, 2006; Purdie & Ellis, 2005; Rowe, 2006a,c; Wheldall, 2006). Whereas *constructivism* is an established, legitimate theory of *learning* and *knowing* (McInerney & McInerney, 2006), it is **not** a theory of *teaching*. This has particular relevance for effective pedagogy during the middle years, especially given the strong advocacy in middle school teaching for 'hands-on', 'action-oriented', *constructivist* learning activities. Bruce Wilson (a former CEO of the Australian Curriculum Corporation) at a conference under the auspices of the Australian and New Zealand School of Government (AZSOG), underscored the fundamental importance of explicit *teaching* in contrast to prevailing emphases on *constructivism*. In highlighting the inappropriateness of *constructivism* as an operational *theory of teaching*, Wilson (2005: 2-3), posits:

> … We largely ignore generations of professional experience and knowledge in favour of a slick postmodern theoretical approach, most often characterised by the misuse of the notion of constructivism.
>
> … Australian and New Zealand operational views of constructivism confuse a theory of knowing with a theory of teaching. We confuse the need for the child to construct her own knowledge with a form of pedagogy which sees it as the child's responsibility to achieve that. We focus on the action of the student in the construction of knowledge rather than the action of the teacher in engaging with the child's current misconceptions and structuring experiences to challenge those misconceptions. … The constructivist theory of knowing has been used to justify a non-interventionist theory of pedagogy, whereas it is a fair interpretation to argue that constructivism requires vigorous interventionist teaching: how, after all, is a student with misconceptions supposed to challenge them unaided? How does she even know they are misconceptions?
>
> We need, instead, a view of teaching which emphasises that the role of the teacher is to intervene vigorously and systematically; that is done on the basis of excellent knowledge of a domain and of student conceptions and misconceptions in that domain, assembled from high quality formative assessments; and that the purpose of the intervention is to ensure that the child's construction of knowledge leads her to a more correct understanding of the domain.

These assertions by Wilson are consistent with expressed concerns that most faculties and schools of education in New Zealand and Australian universities currently providing pre-service teacher education base their programs on *constructivist* views of both learning *and* teaching.[19] Westwood (1999), for example, highlights the

[19] See: de Lemos (2002, 2004a); Fielding-Barnsley and Purdie (2005); Louden *et al.* (2005a-c); Rohl and Greaves (2004); Rowe (2005a, Appendix 2); Westwood (2004, 2006). According to Hills (2007), the same applies to pre-service teacher education throughout the USA, suggesting that constructivist approaches to teaching – especially in mathematics – are 'risky'; see also National Academies (2007).

results of a South Australian study which found that most teachers (79%) had been strongly encouraged to use a *constructivist* approach in their initial teacher education courses and during in-service professional development programs. Even more notably, 67 per cent of the teacher trainees in this study indicated that *constructivism* was the *only* teaching approach to which they had been exposed in their teaching method courses. Commenting on these findings, Westwood (1999: 5) declares:

> At the same time as constructivist approaches have been promoted, direct teaching methods have been overtly or covertly criticised and dismissed as inappropriate, with the suggestion that they simply don't work and are dull and boring for learners. The message that most teachers appear to have absorbed is that all direct teaching is old-fashioned and should be abandoned in favour of student-centred enquiry and activity-based learning.

In concluding their more recent critique of prevailing constructivist approaches to teaching, Kirschner, Sweller and Clark (2006: 84) observe:

> It is regrettable that current constructivist views have become ideological and often epistemologically opposed to the presentation and explanation of knowledge. As a result, it is easy to share the puzzlement of Handelsman et al. (2004), who, when discussing science education, asked: "Why do outstanding scientists who demand rigorous proof for scientific assertions in their research continue to use and, indeed defend on the bias of intuition alone, teaching methods that are not the most effective?" (p. 521). It is also easy to agree with Mayer's (2004) recommendation that we "move educational reform efforts from the fuzzy and unproductive world of ideology—which sometimes hides under the various banners of constructivism—to the sharp and productive world of theory-based research on how people learn" (p. 18).

Dinham (2007b) also considered the issue of student control over learning and the degree to which teachers direct and guide the process. Using a conceptual framework devised by Dianna Baumrind (1991) on parenting styles, Dinham reviewed the findings of a range of research studies into successful or effective teaching, including a major study of successful teaching in Years 7-10 (Dinham, 2007a).

According to Baumrind (1991), two dimensions underlie parenting style: *responsiveness* and *demandingness*. Each considers the nature of the parent-child relationship. *Responsiveness*, also described as 'warmth' or 'supportiveness', is defined as "the extent to which parents intentionally foster individuality, self-regulation and assertion by being attuned, supportive, and acquiescent to children's special needs and demands", while *demandingness* (or behavioural control) refers to "the claims parents make on children to become integrated into the family whole, by their maturity demands, supervision, disciplinary efforts and willingness to confront the child who disobeys" (Baumrind, 1991: 62).

By considering the two dimensions of *responsiveness* and *demandingness*, and whether each is low or high, four parenting styles have been proposed by researchers:

- *Uninvolved* – low *responsiveness*, low *demandingness*;
- *Authoritarian* - low *responsiveness*, high *demandingness*;
- *Permissive* – high *responsiveness*, low *demandingness*; and
- *Authoritative* – high *responsiveness*, high *demandingness*.

As a result of this review of research into successful teaching, and using Baumrind's framework, Dinham (2007b: 38) concluded:

> In the early 1960s education in much of the world was characterised by high demandingness and low responsiveness, i.e., an authoritarian relationship existed between schools and students.
>
> As a wave of questioning of tradition, accepted practices and authority swept the western world, this was reflected in changing thinking in teacher preparation and schooling.
>
> Quite rightly, there was a feeling that schools needed to respond more to students as people and better cater for their individual needs. Teachers questioned established school organisational and teaching practices and over the following decades curriculum prescription and testing gave way to school-based curriculum development and other forms of assessment. Students, like many members of society, began to speak up and engage in various forms of questioning, protest and activism.
>
> Social concerns such as pollution and environmental degradation, racism, sexism, drugs, sexual health and awareness, nuclear warfare, militarism and multi-nationalism found a place in school curricula. Values education became prominent whilst examinations became less so.
>
> Perhaps many of these developments were desirable and even overdue. However, a fundamental error of perception occurred at this time that has ramifications to this day. Put simply, *demandingness* and *responsiveness* were falsely dichotomised. Ideologically, it was believed that any increase in *responsiveness* towards students must be accompanied by, and in fact required a decrease in *demandingness*. To be *responsive* was to be 'progressive'; to be *demanding* was traditional.
>
> Over time, schools and schooling became more responsive and less demanding of students, i.e., more permissive, with commensurate effects on matters such as standards, expectations, teaching methods and curriculum balance. Other false dichotomies also reflected the polarisation of ideologies in education: knowledge versus skills; process versus subject-matter content; competition versus collaboration; progressivism versus conservatism; subjects versus thematic approaches; and so forth.

There are further issues related to the 'overlap' between education and health that are fundamental to effective pedagogical provision during both the early and middle years of schooling. For example, the work of educational psychologist John Edwards highlights the negative effects of *ineffective* teaching and learning practices in a typical 'teacher-talk-dominated' classroom that he refers to as 'the sea of blah'. Edwards (2000: 4-5) asserts: "…there are thousands of students throughout the entire duration of their primary and secondary schooling who are bobbing up and down like corks in a sea of classroom and teacher-generated blah".

The research on *Auditory Processing Capacity* (APC)[20] among more than 11,000 school children and adolescents (5-15 year-olds) underscores Edwards' assertions (i.e., KS Rowe, Pollard and Rowe, 2003, 2005).[21] This five-year longitudinal study employed a strong evidence-based research design among representative samples of *trial* and *reference/control* schools. With the support of audio-visual media, teachers in the *trial* schools attended a one-hour PD program. This program was designed to: (1) raise teachers' awareness of the normative development of students' capacities to process oral/verbal information, (2) provide training in the standardized administration of two

[20] A*uditory Processing Capacity* (APC) is defined as the *ability to hold, sequence and process accurately what is heard.*

[21] For further reports related to this work, see: Rowe and Rowe (2005, 2006, 2007); Rowe, Rowe and Pollard (2004).

audiological screening protocols (*digit span* and *sentence length*), and (3) provide instruction on practical management and intervention strategies for use by teachers in the classroom. For 'control' purposes, teachers in the *reference* schools were not provided with these three 'intervention' elements. Salient elements of the PD program used in the study with teachers in the *trial* schools included consciousness raising and training in the following classroom-based strategies:

- Attract the student's attention; speak slowly, use short sentences ('chunked'), maintain eye contact, use visual cues and wait for compliance; and
- PAUSE between sentences. If repeats are required, restate slowly and simply, and provide regular encouragement; monitor the student; e.g., if 'blank look' response, stop and begin instruction again; establish hearing, listening and compliance routines.

Although these strategies are not 'rocket science' – just good pedagogy – outcomes from the study have been dramatic. Compared with their counterparts in the 'control' schools, both English-speaking and non-English-speaking background students in the *trial* schools at all age/grade-levels made significant gains in the obtained literacy achievement progress measures, as well as on their measured *attentive* behaviours in the classroom – regardless of their socio-cultural and socio-economic background and/or school 'intake' characteristics.

In the context of common health, wellbeing and educational concerns among children and adolescents, growing demands for the provision of 'ambulance services' at the bottom of the 'cliff' become increasingly difficult to justify when educational 'fences' could and should have first been built at the top. Clearly, such 'fences' can best be achieved by building teachers' pedagogical skills and capacities that meet the developmental and learning needs of the students for whom they have responsibility. To this end, an APC teacher PD and assessment kit has been developed (see KS Rowe, Pollard and KJ Rowe, 2006).

5.7 The Importance of a Language of Pedagogy for the Middle Years

Several studies have highlighted the need for teachers engaged in middle school initiatives to have a language or model of pedagogy on which to base discussions, planning, teacher learning, student assessment and evaluation. For example, Sellar and Cormack (2006) reported on the *Redesigning Pedagogies in the North* (RPiN) project which focussed on the redesign of middle years pedagogies in ten state high schools located in the northern suburbs of Adelaide, Australia – an area with significant issues around poverty and social disadvantage. Sellar and Cormack note (np):

> Teacher-researchers spoke about the myriad challenges they face teaching in Adelaide's northern 'rust belt' communities, including classroom and behaviour management issues, dealing with a lack of funding and resources and trying to engage students in achieving educational outcomes which enable them to make real choices about their life trajectories. In these early discussions among the teacher researchers and with the university researchers involved in the project, there were ongoing difficulties in finding an adequate language to define and describe what was pedagogical about the ways that teachers responded to these challenges.
>
> The researchers were faced with the challenge of both 'hearing' what the teachers had to say as being about pedagogy, and in relating what they said to conceptions of pedagogy being used in contemporary middle school literature. It became clear that being able to develop a shared concept of pedagogy that helped to mediate between teachers' reports and theoretical accounts was important if the teacher and university

> researchers were going to be able to describe, experiment with, and redesign the work of teaching and learning in the classrooms of the RPiN schools. … it became clear that the silences around pedagogy were more complex than a simple terminological slippage. It was clear that there wasn't a shared language for talking about pedagogy between and among the teachers and researchers, and that those terms that were used did not necessarily mean the same thing to all participants.

On the other hand, Aubusson et al. (2005) reported on an evaluation of the Australian Government Quality Teaching Program (AGQTP) in 81 New South Wales (NSW) government primary and secondary schools. In this case, project schools were required to use the recently introduced NSW Model of Pedagogy (NSW DET, 2003) in planning, conducting and evaluating *Quality Teaching Action Learning* (QTAL) projects.

One of the findings from the evaluation of the 50 projects carried out in the 81 schools participating in the AGQTP, was that teachers, university advisors, system officials and the evaluation team members, were all able to reflect on and communicate about pedagogy and pedagogic change using the framework and terminology provided by the NSW model. In fact, it was apparent that many very experienced teachers had been revitalised by both the model and the QTAL projects, and were now engaging in deep discussion about teaching and learning, something which they admitted was largely absent previously. Aspects of the model were visible in staff rooms and classroom displays which served as both resources and reminders. A surprising finding was that students as early as Kindergarten and Year 1 were observed to be using some of the model tools and terminology correctly to describe and even guide their own learning.

Authentic, Valid Assessment

Of relevance to this review, there are two broad aspects of trends in assessment for the middle years. The first is the attempt to devise more effective and richer assessment tasks 'in-house'. The second is the increased use of externally devised standardised tests (state/provincial, national, international) and the reporting of student and school results in various forms, such as more easily understood student and school reports, and through formulating and publicising schools' 'league tables'.[22]

In this context, the interactive online *asTTle* program (*Assessment Tools for Teaching and Learning*: He Pūnaha Aromatawai mō te Whakaako me te Ako) is arguably the most sophisticated and advanced assessment monitoring tool available. In brief, *asTTle* is an educational resource for assessing literacy and numeracy (in both English and Māori) developed for the New Zealand Ministry of Education by the University of Auckland under the leadership of Professor John Hattie. *asTTle* provides teachers, students, and parents with information about a student's level of achievement, relative to the curriculum achievement outcomes, for levels 2 to 6 and national norms of performance for students in years 4 to 12 (http://www.tki.org.nz/r/asttle/).

An important feature of *asTTle* is that teachers can use the provided item bank to create 40-minute, 'in house' paper and pencil test designed for their own students' learning needs. Once the tests are scored, the *asTTle* tool generates interactive graphic reports that allow teachers to analyse student achievement against curriculum levels, curriculum objectives, and population norms. Research and development over 2003–2004 has extended *asTTle* into years 8–12 and curriculum levels 5–6.

[22] The dangers of constructing and using 'league tables' have been well-documented by: Goldstein and Myers (1996); Goldstein and Spiegelhalter (1996); Goldstein and Thomas (1996); Rowe (2000).

Highly effective schools have been found to increasingly use internal and external assessment techniques of this kind, and the derived achievement progress data for diagnostic purposes (Dinham, 2007a; Dinham, Buckland et al., 2007).

Unlike what is available via *asTTle*, some have expressed concern with traditional assessment methods in schools that lack 'authenticity' in terms of validity, 'assessment for learning' and the monitoring of student achievement progress and/or 'growth'.[23] In noting this concern, the ACT Department of Education and Training web site, for example, defines authentic assessment thus:[24]

> Authentic assessment involves students in tasks that are derived from and simulate "real life" (or authentic) conditions or situations. Its aim is to provide valid and accurate information about what students really know and are able to do. Authentic assessment:
>
> - requires students to construct responses rather than select from pre-existing options;
> - makes students aware of the criteria that will be evaluated;
> - focuses on higher-order thinking skills;
> - is holistic and integrated into the classroom curriculum;
> - is based on work samples collected over time to create a portfolio;
> - respects that there can be more than one answer; and
> - encourages students to reflect on and assess their own work and effort.

The implicit assumption with authentic assessment is that such tasks are more likely to connect with students' life experiences. Such 'relevance' is considered important in motivating and engaging students. Another point worth noting is that most frameworks and models of pedagogy integrate assessment, as asserted by Wyatt-Smith et al. (2005: 272):

> Effective pedagogy requires effective assessment, assessment that provides the critical links between what is valued as learning, ways of learning, ways of identifying need and improvement, and perhaps most significantly, ways of bridging school and other communities of practices … Nothing can be so dampening on learning by middle years students as narrowly-construed assessment that serves only to reinforce a sense of failure and diminish self-esteem.

One of the assumptions with current approaches to assessment is that properly constructed and utilised assessment items and procedures can raise student achievement standards (Assessment Reform Group, 1999: 4-5):

---

[23] See: Masters, Meiers and Rowe (2003); Rowe (2005c, 2007d). Moreover, the Australian Council *for* Educational Research (ACER) has developed several 'growth model' assessment instruments, the most notable of which include: the *Developmental Assessment Resource for Teachers* (DART English) by Forster, Mendelovits and Masters (1994). More recently, in collaboration with the New Zealand Council *for* Educational Research (NZCER), ACER has developed the widely acclaimed *Progressive Achievement Tests* in: (a) *Reading*: Comprehension and Vocabulary (PAT-R; ACER, 2005a), and (b) *Mathematics* (PAT-Maths; ACER, 2005b). [For recent applications of the PAT-R and PAT-Maths instruments in the context of monitoring the progress of students with learning difficulties, see: Rowe, Stephanou & Hoad, 2007; and Rowe, Stephanou & Urbach, 2006].

A key feature of the PAT instruments, for example, is that because all test forms are calibrated on a common developmental logit scale from school entry to Year 9/10, they are particularly useful for teachers in: (a) monitoring students' learning and achievement progress, (b) diagnosing specific student learning strengths and weaknesses, and (c) providing teachers with pointers for pedagogical intervention, whether for remediation and/or extension purposes.

[24] http://www.det.act.gov.au/publicat/sei_qt_authentic.htm.

> In a review of research on assessment and classroom learning, commissioned by the group authoring this paper and funded by The Nuffield Foundation, Professors Paul Black and Dylan Wiliam (1998) synthesised evidence from over 250 studies linking assessment and learning.
>
> The outcome was a clear and incontrovertible message: that initiatives designed to enhance effectiveness of the way assessment is used in the classroom to promote learning can raise pupil achievement. The scale of the effect would be the equivalent of between one and two grades at GCSE for an individual. For England as a whole, Black and Wiliam estimate that its position in respect of mathematical attainment would have been raised in the recent Third International Mathematics and Science Study from the middle of the 41 countries involved to being one of the top five. They also found evidence that the gain was likely to be even more substantial for lower-achieving pupils. The research indicates that improving learning through assessment depends on five, deceptively simple, key factors:
>
> 1. the provision of effective feedback to students;
> 2. the active involvement of students in their own learning;
> 3. adjusting teaching to take account of the results of assessment;
> 4. a recognition of the profound influence assessment has on the motivation and self-esteem of pupils, both of which have crucial influences on learning; and
> 5. the need for pupils to be able to assess themselves and understand how to improve.
>
> At the same time, several inhibiting factors were identified. Among these are:
>
> - a tendency for teachers to assess quantity of work and presentation rather than the quality of learning;
> - greater attention given to marking and grading, much of it tending to lower the self-esteem of pupils, rather than to providing advice for improvement;
> - a strong emphasis on comparing pupils with each other which demoralises the less successful learners;
> - teachers' feedback to pupils often serves social and managerial purposes rather than helping them to learn more effectively;
> - teachers not knowing enough about their pupils' learning needs.
>
> There is also much relevant evidence from research into the impact of National Curriculum Assessment in England and Wales, one of the most far-reaching reforms ever introduced into an educational system. That evidence suggests that the reforms have encouraged teachers to develop their understanding of, and skills in, assessment. However, the very high stakes attached to test results … are now encouraging teachers to focus on practising test-taking rather than on using assessment to support learning. Pupils are increasingly seeing assessment as something which labels them and is a source of anxiety, with low-achievers in particular often being demoralised. Other evidence of how practice fails to live up to the principles which make achievement of higher standards a reality comes from school inspectors. The evidence from inspections here is abundant evidence from reports of school inspections that the use of assessment to help pupils learn is one of the weakest aspects of practice in classrooms across the UK.

With increasingly greater emphasis on assessment, reporting and accountability, occurring within a context of greater attention being placed on teacher and school performance, as well as litigation for educational malpractice, a key issue lies with the skills, knowledge and tools teachers and schools need to devise authentic, valid and reliable authentic assessment tasks that aid and record learning progress. Wyatt-Smith et al. (2005: 298) note:

> The sheer quantity of the current focus on assessment and accountability occurring for the middle years of schooling places teachers in these areas under more pressure to deliver not only good outcomes but also to ensure that appropriate assessment practices occur.

As mentioned earlier, there have also been concerns raised with the use of standardised tests, which some believe to be incompatible with the philosophies of *middle schooling*. The concern is that external testing and reporting, along with other accountability measures, places undue pressure on schools that result in 'teaching to the test' and 'drill' rather than depth of study. The publication of 'failing schools' and the loss of reputation and resources that can accompany this status under regimes such as *No Child Left Behind* in the USA and OfSTED inspections in the UK, are seen to worsen an already poor situation for disadvantaged school communities, with the more affluent, aspirational families removing their children and schools entering a downward spiral.

However, the *An Exceptional Schooling Outcomes Project* (ÆSOP) study of year 7-10 school success has shown that such decline can be arrested through leadership, student welfare, focus on pedagogy, curriculum and assessment, teacher professional learning, and a proactive, outward-looking approach (Dinham, 2007c).

Involving Students in the Curriculum and School

One of the frequently cited and advocated features of *middle schooling* is that of student involvement in classroom curriculum planning. Hunter and Park (2005: 164) have noted: "Research suggests that students' learning is more effective and rewarding if they have a 'voice' in and ownership of aspects of the curriculum and the teaching/learning process".

The National Middle School Association in the USA has stated (NMSA website):

> Many educators support the idea that young adolescents should and can be involved in classroom curriculum planning. Such involvement could include helping to determine curricular goals, content, methodology, activities, materials, and means of assessment - all of which are components of a curriculum and are included in curriculum planning.
>
> … One model that can be used to involve students in classroom curriculum planning is called "negotiating the curriculum" … "Negotiating the curriculum" is similar to many of the ideas and methods used in teacher-student planning, a method that has been used by teachers for many years … When negotiating the curriculum, four questions are presented which will assist learners in focusing in on the problem, question, or issue of the intended study, whether determined by the teacher or by the students and teacher together.
>
> 1. What do we know already? (Or where are we now and what don't we need to learn or be taught?)
> 2. What do we want and need to find out? (Or what are our questions? What don't we know? What are our problems, curiosities, and challenges?)
> 3. How will we go about finding out? (Where will we look,? What experiments and inquiries will we make? What will we need? What information and resources are available? Who will do what? What should be the order of things?)
> 4. How will we know and show that we've found out when we've finished? (What are our findings about what we have learned? Whom will we show? For whom are we doing the work and where next?) (p. 21).

What the NMSA has not articulated is the *degree* to which students can or should be involved in curriculum planning, merely the types of possible involvement. Further, while such involvement is seen by the NMSA and others as desirable, once again, there is no evidence provided of how such involvement might predict enhanced student attainment. In summary, the NMSA states (web site, np):

> Young adolescents can and should be involved in classroom curriculum planning. They have good ideas that can enhance the teaching-learning situation. However students are involved, though, the teacher continues to be the person who is responsible for students' learning of necessary knowledge and skills and for keeping a thorough record of what students have learned.

Another aspect to student involvement is that of teacher-student relationships, and student involvement in decision making through a more 'democratic' classroom and school climate. There is a persistent view in some of the *middle schooling* literature that traditional models of schooling and teaching and the power relationships inherent in these are oppressive to students, and that middle school arrangements and practices offer the opportunity for more positive teacher-student relationships. As with student involvement in the curriculum, enhanced student involvement in classroom and school decision making is believed to increase student engagement, motivation and achievement.

Classrooms and school environments based on mutual respect and positive relationships, and sound and fair student welfare and discipline policies and programs, have all been advocated. Keddie and Churchill (2005: 224) note:

> Facilitating relations of mutual respect and support … works to disrupt, and provide alternatives to, the traditional power inequities that continue to exist between teachers and their students … we have argued the importance of teacher-student relationships characterised by mutual respect, support, dignity, connection and understanding.

The ÆSOP study of schools achieving exceptional educational outcomes in Years 7-10 public schools in NSW highlighted the importance of positive relationships with students. Positive relationships are a product of particular approaches to teaching and learning, but they are also the foundation or resource for further improvement in student, teacher and school performance. The ÆSOP study found the following features in the 38 highly performing schools. Dinham (2007c: 269-270) observed:

> *Student support, common purpose and collaboration* – student welfare was found to be central in these schools and faculties, and seen as every staff member's responsibility. The purpose of student support and welfare is not about 'warm fuzzies' or boosting self-concept but of 'getting students into learning'. Support from school leaders for student welfare programs and procedures is essential and students clearly understand and support student welfare as something done *for* and not *to* them. Over time, there is an improvement in standards, behaviour and attitude that underpins academic success, personal growth and social cohesion. …
>
> *Focus on students, learning and teaching* – this emerged as the core category from data analysis of the 38 school case study reports. Within faculties and the school there is concern for students as people, and teaching and learning are the prime considerations of the school. There are commonly cross-school approaches to pedagogy, assessment, reporting and tracking of student achievement, with a particular focus on the year 6-7 primary to secondary transition. There is an emphasis on data-informed decision making. There is consistency yet flexibility in policy implementation, with the simple, standard things done well. While some staff characterised this as 'zero tolerance', in reality this was found to be more a case of

> having clear guidelines and effective communication to ensure that everyone understands procedures and where he or she stands. However, when needed, compassion and flexibility were evident.

Further, in a recent review of research into the effects of leadership on student outcomes, Robinson, Lloyd and Rowe (in press) concluded:

> The more leaders focus their influence, their learning, and their relationships with teachers on the core business of teaching and learning, the greater their influence on student outcomes.

While productive and positive student-teacher relationships were identified in the ÆSOP study as being a characteristic of the highly performing junior secondary schools, it needs to be acknowledged that good teachers and school leaders at all levels of schooling find ways to enhance student involvement in the learning process. Mutual respect, attention to student welfare and positive relationships are not just the province of middle schools or *middle schooling*.

Generalist Teachers, Curriculum Integration and Interdisciplinarity

The use of generalist rather than specialist teachers is frequently advocated in *middle schooling*. The rationale for this is that when students have fewer teachers than the normal secondary pattern, teachers and students get to know each better in the manner of primary schooling. Having fewer teachers is also seen to limit the adjustment needed from a single primary teacher to many secondary teachers, although it needs to be recognised that the use of specialist teachers in the primary years has increased in recent decades, especially in non-government schools which tend to have more flexible staffing arrangements and, in some cases, more resources, than public/state/ government schools.

Once again, evidence for the generalist teacher hypothesis is thin and based on intuitive and anecdotal, rather than empirical evidence. The key point of concern with generalist teachers is whether such teachers possess the depth of knowledge and understanding, along with discipline specific pedagogy, to fully challenge and meet the needs of their students and to teach their subject matter effectively. Put simply, are generalist teachers as effective as specialists in facilitating student achievement with middle years students? A number of researchers of the middle years dispute this (see Dole, 2005; Pegg, Lynch & Panizzon, 2007).

A second, related issue is that of integrated curricula and interdisciplinary studies, often achieved using thematic approaches or case studies which combine the elements of a number of subjects. Wallace, Venville and Rennie (2005: 151-155) have summarised the various forms of curriculum integration as follows:

- *Synchronised approach* … involve[s] the teaching of similar content and processes in separate subjects across the middle school … often at similar times. … Typically, it involves teachers from different subject areas identifying points of connection between pre-existing topics, explicitly drawing the links and teaching in a similar manner, sometimes using common tasks or assignments. …
- *Cross-curricular approach* … to integration involves the incorporation or harmonisation of broad skills, concepts or attitudes across separately taught elements of the middle school curriculum. …
- *Thematic approach* ... usually involves linking various middle school subjects into a particular theme or current point of focus … usually selected in advance by groups of middle school teachers to run for a set period … Typically, the disciplines are taught separately in different classrooms, with teachers and students expected to

> make the connections back to the theme. Sometimes the classes are brought together for a culminating thematic event, such as an excursion. …
>
> - *Project-based approach* … involves the deliberate organisation of the middle school curriculum around a project or series of projects in which the subject boundaries are blurred. Integration in this form is seen as a culminating event requiring the application and assembly of an array of knowledge and skills that might come from different subjects.
> - *School-specialised approach* … a middle school (sometimes in concert with the primary and senior school) adopts a long-term curriculum commitment to a particular specialisation … Examples … include horticulture and performing arts.
> - *Community-focused approach* … those that reach out beyond the school into the wider community … they bring the disciplines together to tackle or 'solve' some problem or issue. … Ideally, a community-based approach goes beyond a theoretical consideration of a problem, involving also some individual or concerted action on the part of students, such as tree planting or writing letters to the local media.

Again, as with generalist teachers, approaches to curriculum integration are "signature practices" for *middle schooling*. Bahr, Bahr and Keogh (2005: np) write:

> Middle years researchers claim that interdisciplinarity in teaching appropriately meets the needs of early adolescents by tying concepts together, providing frameworks for the relevance of knowledge, and demonstrating the linking of disparate information for solution of novel problems. Cognitive research is not wholeheartedly supportive of this situation. Learning theorists assert that application of knowledge in novel situations for the solution of problems is actually dependent on deep discipline-based understandings.
>
> … Writers in favour of interdisciplinarity occasionally resort to emotive rhetoric in attempts to debunk disciplinarity. For example, a recent National Middle Years of Schooling (NMSA) Research Summary (2000) refers to "separate subject organisations" (disciplinarity) as a "fanaticism". However, there is not yet a body of research to provide substantive and convincing evidence demonstrating enhanced learning due to interdisciplinarity. Further, in literature promoting interdisciplinarity for the improvement of learning in the middle years there is little explicit discussion of how interdisciplinarity leads to the building and/or identification of cognitive relationships.

In reviewing the research evidence of the efficacy of interdisciplinarity, Bahr et al. (2005: np) note that while student behaviour, attendance and motivation are areas where outcomes appear to be most positive:

> … integrated curriculum is not universally accepted by teachers and students. When compared with conventional programs, teachers and students sometimes report concerns about extent of content coverage and the amount of learning taking place. … This is particularly true of high achieving students.

Bahr et al. (2005: np) cite research findings which reveal logistical and planning difficulties regularly experienced with interdisciplinary teaching (i.e., timetabling, planning time, teaming), and comment:

> These research investigations do not directly test the fundamental premise that interdisciplinarity provides superior opportunities for the development of deep seated knowledge and understanding. With respect to learning, the field lacks of strong evidence base. There is in fact very little research into interdisciplinary classrooms.

Bahr et al. (2005: np) conclude that much of the claims for positive outcomes for interdisciplinarity are unsubstantiated by research:

> Our concerns with interdisciplinarity echo those of other authors, notably Beane (2005) who states that "While the multidisciplinary and interdisciplinary designs are intended to cross subject boundaries, those approaches are still aimed at encountering and mastering content from the subjects involved" (p 4). This basically aligns with our view that mastery of disciplinary knowledge is important before interdisciplinarity can be effective in classrooms.
>
> There is a danger in assuming that breadth of curriculum will provide the type of deep, well structured and expansive knowledge base that can be readily accessed for consideration of interdisciplinary problems. Poorly instantiated knowledge domains are not an appropriate base for the development and/or employment of higher-order thinking. Higher-order thinking, however, is a particular objective for effective Middle years of Schooling (e.g., Vars, 2001). Students who have been exposed to a broad educational program that lacks depth may be disadvantaged.
>
> We advocate for further research into this area. Middle Schooling Reform is built around interdisciplinarity and for sustainability of appropriate schooling for early adolescents we can't afford to get this aspect of the package wrong. Research into the efficacy of interdisciplinarity versus disciplinarity … will inform the development of effective management of middle years of schooling curriculum.

It is acknowledged that matters such as curriculum integration, discrete subjects, generalist teachers, and the like, are the subject of political and stakeholder contestation within *middle schooling* and the more general educational context. There are strong ideological positions involved, as evident in the comment previously about 'fanatics'. Dowden (2007: 65), a supporter of curriculum integration in the middle grades, warns that:

> Despite the eminent suitability of integrative curriculum designs in the middle grades, the American experience suggests that attempts to implement integrative curricula … are likely to encounter political resistance. Powerful forces are allied with the traditional subject-centred single-subject curriculum, not the least being middle grade teachers' own conceptions and views of themselves as 'subject teachers'. As a result, stakeholders in the traditional curriculum may impede the development of student-centred approaches, thus stifling general acceptance of the integrative model as the preferred curriculum for the middle grades.

The key issue here is, 'preferred' by whom, and on the basis of what evidence?

5.8 Middle School Initiatives Targeted at Specific Groups and/or Problems

5.8.1 Diverse Students

In one of a series of Best Evidence Syntheses by the New Zealand Ministry of Education, Alton-Lee (2003) found the following in respect of quality teaching for diverse students:

> Quality teaching is identified as a key influence on high quality outcomes for diverse students. The evidence reveals that up to 59% of variance in student performance is attributable to differences between teachers and classes, while up to almost 21%, but generally less, is attributable to school level variables.
>
> This best evidence synthesis has produced ten characteristics of quality teaching derived from a synthesis of research findings of evidence linked to student outcomes. The central professional challenge for teachers is to manage simultaneously the complexity of learning needs of diverse students.
>
> The concept of 'diversity' is central to the synthesis. This frame rejects the notion of a 'normal' group and 'other' or minority groups of children and constitutes diversity and difference as central to the classroom endeavour and central to the focus of quality teaching in Aotearoa, New Zealand. It is fundamental to the approach taken

> to diversity in New Zealand education that it honours Articles 2 and 3 of the Treaty of Waitangi.
>
> Diversity encompasses many characteristics including ethnicity, socio-economic background, home language, gender, special needs, disability, and giftedness. Teaching needs to be responsive to diversity within ethnic groups, for example, diversity within Pakeha, Māori, Pasifika and Asian students. We also need to recognise the diversity within individual students influenced by intersections of gender, cultural heritage(s), socio-economic background, and talent. Evidence shows teaching that is responsive to student diversity can have very positive impacts on low and high achievers at the same time. The ten characteristics are interdependent and draw upon evidence-based approaches that assist teachers to meet this challenge.
>
> The ten research-based characteristics of quality teaching derived from the research are generic in that they reflect principles derived from research across the curriculum and for students across the range of schooling years in New Zealand (from age five to eighteen). How the principles apply in practice is, however, dependent on the curriculum area, and the experience, prior knowledge and needs of the learners in any particular context. The body of this synthesis provides examples from the research on learning and teaching to illustrate the principles for different curricular areas across schooling from junior primary to senior secondary classes.

The ten characteristics generated from the synthesis are summarised below:

1. Quality teaching is focused on student achievement (including social outcomes) and facilitates high standards of student outcomes for heterogeneous groups of students;
2. Pedagogical practices enable classes and other learning groupings to work as caring, inclusive, and cohesive learning communities;
3. Effective links are created between school and other cultural contexts in which students are socialised, to facilitate learning;
4. Quality teaching is responsive to student learning processes;
5. Opportunity to learn is effective and sufficient;
6. Multiple task contexts support learning cycles;
7. Curriculum goals, resources including ICT usage, task design, teaching and school practices are effectively aligned;
8. Pedagogy scaffolds and provides appropriate feedback on students' task engagement;
9. Pedagogy promotes learning orientations, student self-regulation, metacognitive strategies and thoughtful student discourse; and
10. Teachers and students engage constructively in goal-oriented assessment.

5.8.2 Indigenous Students

Findings from the Te Kotahitanga case study reported by Timperley, Wilson et al. (2007b) are particularly worthy of note. This ongoing project (currently in its fifth year) aims to improve educational outcomes for Māori students in mainstream New Zealand secondary schools via strategic foci on teacher professional learning. With an emphasis on reducing disparities in educational outcomes for Māori students, the project aims to assist teachers to reflect critically on the assumptions they make about their interactions and relationships with Māori students, and to interrogate their own roles in contributing to low academic achievement, and to high rates of absenteeism and

suspensions. The professional learning provided has been designed to support participating teachers to implement the *Te Kotahitanga Effective Teaching Profile* (ETP), namely:

> Effective teachers of Māori students create a culturally appropriate and responsive context for learning in their classroom. In doing so they demonstrate the following understandings:
>
> a. They positively and vehemently reject deficit theorising as a means of explaining Māori students' educational achievement levels.
> b. Teachers know and understand how to bring about change in Māori students' educational achievement and are professional committed to doing so in the following observable ways:
>
> 1. **Manaakitanga** – They care for students as culturally located human beings.
> 2. **Mana motuhake** – They care for the performance of their students.
> 3. **Whakapiringatanga** – They are able to create a secure, well-managed learning environment by incorporating routine pedagogical knowledge with pedagogical imagination.
> 4. **Wananga** – The are able to engage in effective teaching interactions with Māori students in Māori.
> 5. **Ako** – They can use strategies that promote effective teaching interactions and relationships with their learners.
> 6. **Kotahitanga** – They promote, monitor and reflect on outcomes that lead to improvements in achievement for Māori students.

Findings from the four-phase study, among 37 participating schools to date have been most encouraging. Following comparative, population-based, decile-weighted analyses of the student achievement data in Te Kotahitanga schools, Timperley, Wilson et al. (2007b: 5) summarise the key findings as follows:

> The magnitude of the gain for Māori is quite remarkable: in 2005, prior to the intervention, the percentage of Māori students in the Te Kotahitanga schools that gained NCEA Level 1 was significantly lower than the national percentage for Māori – in 2006 it was significantly higher. In one of the schools involved, 18.8% of Māori gained NCEA Level 1 in 2005 – the following year the percentage was 63.9%.

With the possible exception of findings from the national 'Third Wave' Project across Australian government and non-government schools (Rowe, Stephanou & Hoad, 2007), such dramatic outcomes of interventions for Indigenous students during the middle years are rare. Nonetheless, in considering the impact of *middle schooling* on Australian Indigenous students, Chadbourne (2001) made the observation that it is important to define the sorts of outcomes that such a judgement might comprise, e.g., attendance, behaviour, academic achievement. In his review for the Australian Education Union, Chadbourne (2001: 23-25) noted:

> Very few studies have investigated the impact of middle schooling on the academic achievement, attendance and behaviour of Indigenous (and non Indigenous) students in Australian schools. Any claims about such an impact, then, need to be based more on inference and conceptual grounds than on direct evidence and empirical data.
>
> There is direct evidence to show that traditional schools have not served young Indigenous adolescents well in terms of academic achievement, attendance, retention rates, suspension from school and other forms of disciplinary action.
>
> The philosophy and processes of middle schooling have more in common with the culture and learning styles of Indigenous students than do the cultural pre-requisites of student success in traditional schools. Particular aspects of middle schooling that

> would make Indigenous students feel more 'at home' include: the small size of the (sub) school, the school and classroom as a community, close interpersonal relations between teacher and students, authentic learning and assessment tasks, cooperative learning, heterogeneous classes and action learning. Relationships and being person-motivated are central to middle schooling and Indigenous culture.

A report prepared for the Commonwealth Department of Education, Training and Youth Affairs in Australia, *What works? Explorations in improving outcomes for Indigenous students* (McRae et al., 2000), brought together the findings from around 80 projects, site visits and national workshops. In considering the issues commonly identified for students in the middle years, the report noted (2000: 28-29):

> The issues … apply to Indigenous students just as they do to the rest of the population. Their adolescence is no less turbulent, and their transition from primary to secondary schooling no less traumatic. In fact, loss rates from involvement in formal education tend to escalate from this point. Because of location factors, a higher proportion of Indigenous students is required to move from the comparative comfort of a local primary school to a more distant secondary school, making the transition between the two even more challenging.

In summarising the results from projects with a particular focus on the middle years, the *What works* report of McRae et al. (2000: 39-40) made the following observations:

- Most of these projects were successful in dealing with issues and an age group which are widely seen as among the most difficult in Indigenous education …
- Indigenous students' participation and achievement are likely to be improved where their culture is acknowledged and supported. One of the best ways this can be achieved is through the employment or voluntary presence of Indigenous adults in the school. This is a tangible symbol of the commitment of both the school and indigenous community to the value of education. Such people should have well-defined roles and themselves have support and training for these roles.
- Many Indigenous students benefit from spending periods of time in Indigenous-only learning groups that generally include cultural studies. This appears to produce gains in terms of self esteem and confidence, leading to consequent improvements in school performance. Where small numbers of Indigenous students are isolated from each other, opportunities for networking can produce similar results.
- Professional development focused on cultural awareness for non-Indigenous teachers is important in terms of their knowledge and understanding of Indigenous students and their cultures, and frequently leads to some re-shaping of teacher attitudes. It is reported that this leads to more positive and productive interactions between non-Indigenous teachers and Indigenous students, and thus enhanced learning.
- High teacher expectations of student success and more intensive classroom support are critical factors in improving outcomes.
- There is some evidence that Indigenous students can be supported through increasing the range of learning styles and opportunities employed in the classroom.
- Structured, explicit teaching of 'pro-social' skills can provide avenues through which Indigenous students 'at risk' of leaving school can improve their self esteem, confidence and engagement with the school. This in turn can lead to improved educational outcomes.

Many of the findings of *What works?* are echoed in Chris Sarra's first-hand account of turning around a predominantly Indigenous state primary school in Queensland from the late 1990's (Sarra, 2003). Sarra was the school's first Indigenous principal and

his 'no nonsense', 'no excuses', high expectations approach brought about a dramatic 'turn-around' transformation in attendance, behaviour, school pride, cultural identification and above all, educational attainment, for the school's predominantly Indigenous student body. Sarra (2003: 7) notes in his account:

> Changing the culture of a school is a complex process indeed. One of the greatest challenges was taking on the children's own negative perceptions of who they were as Aboriginal children. … In our school it seemed that historically teachers were in the habit of accepting under-achievement as an 'Aboriginal thing'. This is dangerous and had to be addressed, as it can clearly have the effect of children subscribing to the same negative perception of who they are, and subsequently aspiring downwards as some means of proving to their peers that they are 'Aboriginal' …
>
> As a school we adopted a range of strategies, some of which may appear to be extremely simple yet on deeper analysis are found to really challenge, at a much deeper level, any negative perceptions that children may have harboured about who they were as Aboriginal children. … simple yet complex strategies … designed to 'rock the psyche' of the children and prompt them to change what they were prepared to believe about themselves. Getting children to attend school was an important part of the challenge.

Sarra (2003: 7-12) summarised these strategies as follows:

- Expecting improved attendance;
- Expecting improved student behaviour;
- Expecting improved academic performance;
- Focusing on role models;
- Valuing and utilising Indigenous staff within the school;
- Development of a whole-of-school Aboriginal studies program;
- Generating a sense of solidarity through: a school song; school uniform, and 'school tidy zones'.

5.8.3 Addressing Behavioural and Social Problems

It is generally acknowledged that behavioural and social problems in schooling are most prevalent during the middle years.[25] Teachers in the middle years typically experience challenges around managing the behaviour of their students, maintaining effective and productive classroom environments, and ensuring students' engagement in learning and their achievement progress – especially in literacy. This again raises issues related to the vital link between education and health.

Literacy under-achievement has high social and economic costs in terms of both health and crime. The overlap between students' under-achievement and poor achievement progress in literacy (especially in reading) and their poor behavioural health and wellbeing, is problematic to the extent that what should be an education issue has become a major health issue (see DeWatt et al., 2004).

Dr Reid Lyon (2003: 1-2), Chief of the Child Development and Behavior Branch of the National Institute of Child Health and Human Development (National Institutes of Health, Bethesda, Maryland, US) notes:

> The National Institute of Child Health & Human Development (NICHD) considers that teaching and learning in today's schools reflect not only significant educational concerns, but public health concerns as well. Our research has consistently shown that if children do not learn to understand and use language, to read and write, to

[25] For recent evidence of these problems, see Bernard, Stephanou and Urbach (2007).

> calculate and reason mathematically, to solve problems, and to communicate their ideas and perspectives, their opportunities for a fulfilling and rewarding life are seriously compromised. Specifically, in our NICHD-supported longitudinal studies, we have learned that school failure has devastating consequences with respect to self-esteem, social development, and opportunities for advanced education and meaningful employment. Nowhere are these consequences more apparent than when children fail to learn to read. Why? Simply stated, the development of reading serves THE major foundational academic ability for all school-based learning. Without the ability to read, the opportunities for academic and occupational success are limited. Moreover, because of its importance, difficulty in learning to read crushes the excitement and love of learning, which most children have when they enter school.
>
> … By the end of first grade, children having difficulty in learning to read begin to feel less positive about their abilities than when they started school. As we follow children through elementary and middle school, self-esteem and the motivation to learn to read decline even further.
>
> … It is important to note that this state of educational affairs describes an extraordinary and unacceptable number of children (with reading difficulties). According to the National Center for Educational Statistics, 38% of fourth graders nationally cannot read at a basic level – that is, they cannot read and understand a short paragraph similar to that in a children's book. … The educational and public health consequences of this level of reading failure are dire. Of the 10 to 15% of children who will eventually drop out of school, more than 75% will report difficulties learning to read. Likewise, only two per cent of students receiving special or compensatory education for difficulties learning to read will complete a four-year college program. Approximately half of children and adolescents with a history of substance abuse have reading problems. Failure to learn to read places children's futures and lives at risk for highly deleterious outcomes. For this reason the NICHD considers reading failure to reflect a national public health problem.

Lyons' concerns apply equally in the Australian, New Zealand and UK contexts. The increasing number of anxious parents seeking help from health professionals for their distressed children and adolescents whose behaviour problems have arisen as a consequence of (or are exacerbated by) learning difficulties and failure to acquire functional literacy skills is disturbing.[26] Following Haggerty et al. (1975), Oberklaid (1988, 2004) appropriately refers to this phenomenon as the *new morbidity* in education and child/ adolescent health. In commenting on a study related to the 'gap between health and education' by O'Keeffe and McDowell (2004), Oberklaid (2004: 251) asserts:

> The *new morbidity* is no longer new. Mainstream paediatrics has gone a long way to changing training and practice models to address children with developmental, behavioural and psychosocial conditions. … Perhaps one of the important next steps is to advocate for more systematic paediatric input into teacher training courses and ongoing professional development. In the same way as we now expect paediatricians to understand the classroom implications of organic and developmental disorders, it seems not unreasonable to expect teachers to have a sound knowledge base about children with special needs in their classroom.

Oberklaid's assertion is well supported from earlier comment arising from an extensive body of evidence-based research. For example, in highlighting issues related

[26] See, for example: Barkley and Pfiffner (1995); CCCH (2004); Hinshaw (1992a,b); Rowe (1991); Rowe and Rowe (1992, 1999, 2000, 2002); Rowe, Pollard and Rowe (2005); Sawyer et al. (2000); Silverstein, Iverson and Lozano (2002).

to 'future directions' for ADHD[27] research and intervention policies, Farrelly and Standish (1996: 81) note: "The impact on mental health and educational systems needs to be examined". The response to this recommendation is summarised by an edited extract from Rowe and Rowe (1999: 92), as follows:

> A central aim of educational systems is to generate, stimulate and maintain efforts towards the on-going improvement of teaching and learning practices that link directly to the quality of educational outcomes for students. In our view, such improvements are not likely to be brought about by academic polemic, nor by the 'top-down-driven' administrative fiats of bureaucracies, since the products of these enterprises (mercifully, in most cases) have an established record of rarely penetrating the classroom door. Rather, with the 'informed' support of parents and health professionals, sustained improvement can be achieved via teacher professional development that maximizes their teaching and behavioral management skills in the classroom. It has been our experience that under such circumstances, teachers themselves become the empowered agents and purveyors of change, having consequent 'domino' effects on the teaching and classroom behavioral management practices of other teachers, and throughout the profession. Ultimately, of course, the measures of success or otherwise of such efforts, like all endeavors to improve the quality of school education, will be judged in terms of their impact on the key areas of improved student learning, behavior, and the enhancement of teacher professionalism.
>
> For what is demonstratively the most salient and problematic issue in child and adolescent mental health, the challenge into the 'new millennium' is to refocus the prevailing models accounting for the overlap between inattentive behavior problems and poor academic achievement – together with their related intervention emphases – to *educational ones*. In our view, the personal, social and financial costs of failure to meet this challenge will be both unsustainable and unbearable.

In respect of these issues, it is interesting to note the key findings from the evidence-based research reported by Rowe and Rowe (1999). That is, in summarizing the findings from fitting multilevel structural equation models to the attentive-inattentive and achievement data in their longitudinal study among junior and middle school students, Rowe and Rowe (1999: 61, 64) report:

> …the findings summarized in this chapter indicate that students' literacy achievements and their attentive-inattentive behaviors in the classroom are mediated by complex, multivariate, multilevel, interrelated factors that operate over time and interact in dynamic contexts. That is, the findings again indicate that whereas students' inattentive behaviors in the classroom had small negative effects on their progress in literacy, *Literacy achievement* had significantly stronger effects on **decreasing** their early and subsequent inattentive behaviors in the classroom (or **increasing** both their early and subsequent attentive behaviors).[28] The implications of such findings underscore the importance of ensuring that students are provided with the opportunity of developing literacy skills as early as possible, and highlight the crucial role that teachers have in maximizing effective teaching strategies to meet the cognitive, affective and behavioral needs of all students, as well as providing normative classroom environment conditions that are conducive to learning.

[27] That is, Attention-Deficit/Hyperactivity Disorder (ADHD). For classification and diagnostic criteria details, see: *DSM-IV* (APA, 1994: 78-85).

[28] The computed effect sizes were -0.004 SDs and -0.372 SDs, respectively. When a similar model was fitted to the data for students' inattentiveness and achievement progress in Mathematics, the effect sizes were -0.206 SDs and -0.304 (see Rowe & Hill, 1998: 326-328).

Despite these strong findings, in recent times there has been a greater emphasis in the *middle schooling* literature on and concern for behaviour management, and beginning teachers in some jurisdictions are required to have completed approved classroom management subjects. To some extent, the strategies of behaviour management have been seen as separate skills to be mastered, rather than an integral part of, and outcome of good teaching.

However, there are some teachers who, because of their mastery of teaching, rarely experience discipline problems (Ayres et al., 2004; Dinham, 2007a). Highly effective teachers are able to structure teaching and learning in a way that challenges, interests and engages students, and effective schools as a whole, tend to have clear, fair, responsive and effective student welfare and discipline policies and practices (Dinham, 2007a). In such classrooms and schools, behavioural problems are minimised and dealt with in a timely and effective fashion.

Drawing largely upon two Australian research projects, the first in nine Perth middle schools and the second involving the development of a framework of principles and practices for successful student behaviour management, de Jong (2005: 226-241) outlined six key principles for managing student behaviour in the middle years:

1. Management of middle school student behaviour should be developmentally responsive;
2. Middle school student behaviour needs to be understood from an eco-systemic perspective;
3. Practices associated with behaviour management of middle school students must embrace a health-promoting approach to creating a safe, supportive and caring environment;
4. The management of middle school student behaviour must embrace inclusiveness, which caters for the different potentials, needs and resources of all middle school students;
5. The management of middle school student behaviour should incorporate a student-centred philosophy that places the student at the centre of the learning process and focuses on the whole student (personal, social and academic); and
6. Developing positive relationships with middle school students is fundamental to maximising appropriate behaviour and achieving learning outcomes.

The ÆSOP study of faculties achieving exceptional student outcomes in Years 7-10 in 38 NSW public schools revealed findings which resonate with the principles outlined above. Drawing on data from six schools which were found to have exceptional student welfare program outcomes, Paterson, Graham and Stevens (2007: 38) identified five conditions leading to the effectiveness of such programs:

1. *A framework of clear rights and responsibilities.* Student welfare programs were implemented as part of a framework of rights and responsibilities of students within and beyond the school. Teachers set clear expectations of students in relation to their rights and responsibilities … Teachers provided feedback to students about the degree to which they were meeting these expectations. … There was solidarity and consistency amongst teachers with respect to follow-up.
2. *Integrity.* In managing student support programs, teachers worked effectively as members of a team. Teams were well led and cohesive. Team members shared certain values and approaches that were integral to their practice, but at the same time they were open to change and innovation.

3. *Links.* In managing student support programs teachers established links within the school to other teachers, and links beyond the school to other schools, the system, the wider school community (e.g., parents) and, to an extent, the wider professional community.
4. *Positive School Culture.* Student support programs were nourished by a positive school culture in which teachers demonstrated that they cared about their students' well-being and were dedicated to pursuing their sense of safety, sense of belonging, sense of self-esteem, and establishing a sense of trust between students and teachers, and an accompanying sense of responsibility.
5. *A focus on students and their learning.* Student support programs were effectively integrated into the activities of the school. There was a whole-school focus on students and their learning. Teachers did not focus exclusively on academic or welfare outcomes. They focused on student well-being, both in terms of academic achievement and more broadly defined, safety, security and personal development goals.

What the ÆSOP study demonstrated is that student welfare is both every teacher's responsibility and a whole-school project. What teachers do within their classrooms needs to be congruent and consistent with school-wide systems. Student behaviour/management policies, programs and strategies, while employed by every teacher, can't be left to individual teachers to design and implement. A consistent approach is required, which all teachers and students understand, adhere to and support. A key finding in the ÆSOP schools was that students understood and perceived student welfare programs as something done *for* them, and not *to* them (Dinham, 2007a).

5.8.4 Education for Sexuality in the Middle Years

Another aspect of adolescence and *middle schooling* is that which could be termed sexuality and sexual health education. Once again, this is an example of the high store placed in teachers of the middle years to address and deal with society's issues and problems. A recent New Zealand Education Review Office report, *The Teaching of Sexuality Education in Years 7 to 13*, (2007: Foreword) arose over concerns:

> … to reduce the number of young people with sexually transmitted infections, reduce the rate of unplanned teenage pregnancies and improve teenagers' abilities to avoid and deal effectively with coercive and other abusive behaviour.

The study involved (2007: 1):

> … an evaluation of the quality of sexuality education programmes in Years 7 to 13 in 100 primary (full primary and intermediate) and secondary schools. Sexuality education is one of seven key areas of learning in *Health and Physical Education in the New Zealand Curriculum*. The curriculum is compulsory up to and including Year 10.

The report findings, both negative and positive, mirror those for *middle schooling* generally. The executive summary of the report states (2007: 1-2):

> This evaluation has found that the majority of sexuality education programmes were not meeting students' learning needs effectively. The findings identify two areas of particular weakness across schools. These are assessing learning in sexuality education and meeting the needs of diverse groups of students. Around two thirds of schools in this evaluation needed to improve their performance significantly in these areas.
>
> ERO found good examples of how schools, parents, students and community agencies have worked together to identify and respond to student needs in sexuality education. In these schools governance and management supported community

consultation and development of sexuality education programmes; resources, planning and content were relevant; teachers and students had a strong rapport and support networks were actively promoted; the schools were respectful to all students; and, the schools were safe for all students.

As with other aspects of middle years education, key concerns lie with providing teachers with the skills, knowledge and resources to teach effectively in this area, including the vital provision of instructional leadership (see: Robinson, Lloyd & Rowe, in press; Rowe, 2007b).

5.8.5 Leadership and Teachers' Professional Learning

In the already mentioned study of 38 secondary schools in NSW, Australia where exceptional student outcomes were found to be occurring in Years 7-10, Dinham (2007a) found that school leadership, especially that of the principal, but also other executive, faculty heads and teacher leadership, was an important enabling factor in creating an environment where classroom teachers could teach and students could learn. Briefly, Dinham, 2007a: 267-271) notes that this was achieved through:

1. *External awareness and engagement* – principals are open to change and opportunity and are outward rather than inward looking; they derive benefits for their schools from being in the forefront of mandated change and develop productive external linkages inside and outside the educational system; they are entrepreneurial and efficiently mobilise community, financial and other support.
2. *A bias towards innovation and action* – these principals fully use their discretionary powers and bend the rules on occasion. They are often ground-breakers, some appearing to act on the dictum that 'it is easier to gain forgiveness than permission'. They exhibit a bias towards experimentation and risk taking and are prepared to embrace change, even when things appear to be going well. They support others proposing initiatives and are willing to invest money and time whilst risking failure. They empower others, encapsulated in the expression 'Let's give it a go'.
3. *Personal qualities and relationships* – these leaders were found to have positive attitudes that are contagious and they motivate others through example. They realise negativity can be self-handicapping and their positive approach helps the school to keep moving and improving. They demonstrate a high degree of intellectual capacity and imagination, are astute and are good judges of people. They balance the big picture with finer detail and can deal with many issues concurrently. They know when to consult and when to be decisive and courageous. These principals are authentic leaders, exhibiting the values, professionalism and behaviour they expect of others. They are effective communicators and listen to and assist staff. They provide prompt and appropriate feedback both good and bad. They treat staff professionally, provide (and demand) a professional working environment and expect a high degree of professionalism in return. Others 'don't want to let the boss down'. These leaders are generally liked, respected and trusted, although inevitably, not by all. They demonstrate humour, empathy and compassion and are seen to work for the betterment of the school, teachers and students rather than for themselves, whilst being unmistakeably in control.
4. *Vision, expectations and a culture of success* – these principals 'give a lot and expect a lot'. They communicate clear, agreed high standards and take every opportunity to recognise students and staff. They relentlessly 'talk up the school' and reinforce where the school is attempting to go. They espouse the power of education for social change and find ways for all students to experience success. Their beliefs and actions help create a culture of continuous improvement and 'doing [one's]

best'. They pay attention to the physical environment of the school, provide pleasant, tidy facilities and ensure that all graffiti, rubbish and so forth is dealt with promptly. There are displays of student work and other achievements, and teachers and students identify positively with the school, which has earned a good and often rising reputation in the community.

5. *Teacher learning, responsibility and trust* – these principals place a high value on professional learning, both their own and that of other teachers. They encourage and support teacher learning and fund professional development inside and outside the school. They find ways and means to release staff for professional learning and bring others to the school for this purpose. They recognise that all teachers can be leaders and foster and acknowledge the leadership of others. They 'talent spot', encourage and 'coach' staff to assume responsibility. Trust is an important aspect of the mutual respect they enjoy with staff, students and the community.
6. *Student support, common purpose and collaboration* – student welfare was found to be central in these schools and faculties, and seen as every staff member's responsibility. The purpose of student support and welfare is not about 'warm fuzzies' or boosting self-concept but of 'getting students into learning'. Support from school leaders for student welfare programs and procedures is essential and students clearly understand and support student welfare as something done *for* and not *to* them. Over time, there is an improvement in standards, behaviour and attitude that underpins academic success, personal growth and social cohesion. Many of these principals have found a common purpose to unite the sometime disparate 'silos' of the secondary school, e.g., ICT, assessment, literacy, pedagogy. Resources are diverted to this priority area and often a champion or team is empowered. Such projects serve to bring the school together. These principals are however pragmatic realists, knowing that all staff can't be moved simultaneously – if one waits for everyone to get on the bus, it will never leave - and thus they concentrate on interested and committed staff and provide them with encouragement, guidance, resources, learning opportunities and support. There is danger in this, in that one can be accused of playing favourites and some staff can be left behind, but the hope is that success will have a contagious effect through the school and bring others on board over time.
7. *Focus on students, learning and teaching* – this emerged as the core category from data analysis of the 38 school case study reports. Within faculties and the school there is concern for students as people, and teaching and learning are the prime considerations of the school. There are commonly cross-school approaches to pedagogy, assessment, reporting and tracking of student achievement, with a particular focus on the year 6-7 primary to secondary transition. There is an emphasis on data-informed decision making. There is consistency yet flexibility in policy implementation, with the simple, standard things done well. While some staff characterised this as 'zero tolerance', in reality this was found to be more a case of having clear guidelines and effective communication to ensure that everyone understands procedures and where he or she stands. However, when needed, compassion and flexibility were evident.

The leaders of schools where exceptional outcomes were found to be occurring in years 7-10 shared two common attributes. They were highly aware of and responsive to events and people around them, and they were also highly demanding of themselves and others. Dinham (2007c: 272-273) found that leaders of successful schools manifest responsiveness in their relationships with others by:

- Being warm, supportive and sensitive to individual and collective needs within the school and the wider community;
- Being good listeners and taking an interest in students and staff as people;

- Being able to work with a diverse range of individuals;
- 'Giving a lot' and 'rolling up their sleeves' when necessary;
- Providing timely and relevant positive feedback;
- Identifying and catering for the professional learning needs of staff;
- Finding ways for all staff and students to experience success and recognition;
- Recognising the capabilities of others, 'talent spotting', encouraging, empowering, trusting and supporting staff to develop new programs, policies and practices; and
- Seeking to develop competent, assertive, self-regulated staff and students.

On the other hand, in their relationships with others, the successful leaders manifested *demandingness* by:

- Being confident and assertive, without over-reliance on the rules and sanctions of the authoritarian leader, and pushing the boundaries on occasion;
- Having high, clear expectations and 'expecting a lot';
- Insisting on consistent implementation of policies, rules and procedures and modelling adherence to these;
- Providing prompt, explicit feedback when standards and expectations are not met;
- Being decisive and even courageous when necessary;
- Insisting that teaching and learning is the core purpose of the school and not letting anything get in the way of this agenda;
- Modelling and setting a high standard for professional learning;
- Challenging and moving people out of their comfort zones;
- Adopting and insisting on an approach based on continual evaluation, evidence, planning and action;
- Possessing a vision for the future of the organisation, communicating this and adhering to it; and
- Possessing and demonstrating moral authority, professionalism and commitment.

As noted, leaders of successful schools where exceptional student outcomes were being achieved by students in Years 7-10, placed a major emphasis of professional learning, both of themselves and others. Leaders in the ÆSOP study and other research studies such as a recent evaluation of the Australian Government Quality Teaching Program (Aubusson, Brady & Dinham, 2005), were found to act by facilitating what could be termed a professional learning culture or community (Dinham, 2007b).

5.9 Section Summary

A key concern underpinning middle schooling is the primary to secondary transition. While some students will find the transition somewhat difficult, other students will relish the changes associated with a larger school, a greater number of teachers, older students, a larger peer group, and the variety and challenge of the secondary school.

Paradoxically, while some students fear that secondary school work will be difficult for them, there appears to be a significant issue with too low expectations and standards in the early secondary years for some students. Boredom and disengagement can result from a lack of challenge, and can lead in turn to behavioural problems.

The early secondary years mark the point where some students who were already underachieving in literacy (and numeracy) in the primary years fall further behind their peers. Because so much of schooling is literacy based (including mathematics), those students inadequately equipped with literacy skills can stall and even decline in the early

to mid-secondary years. However there are literacy programs and approaches which have been found to be effective in the middle years. Teachers' professional learning to master these approaches is strongly advocated.

Like literacy, numeracy can also be problematic in the early secondary years where, again, some students plateau or even decline in achievement. Once more, the quality of teaching and teachers' professional learning have been found to be vital factors in facilitating student achievement in numeracy.

Use of models and frameworks of pedagogy have been found to be effective in improving the quality of teaching in schools. Such models and frameworks provide teachers with the means to reflect on, evaluate and plan their professional learning and practice.

Concerns have been raised over the efficacy of constructivism and 'discovery learning'. Studies have cast serious doubt over whether these techniques facilitate student achievement higher than that achieved through more explicit teaching methods. Evidence suggests that once students are in possession of basic knowledge and skills they are in a better position to engage in higher order thinking and more problem-based approaches to learning.

Concerns have also been raised over approaches which advocate 'relevance' and excessive student choice and control over curriculum and teaching and learning approaches. 'Dumbing down' can occur where teachers seek to pander to rather than extend and challenge students. The most effective teachers balance a high degree of responsiveness to students with high demands, standards and expectations.

An important area where teachers in the middle years need professional development is that of 'authentic' assessment for learning. Evidence from many studies clearly indicates that initiatives designed to enhance effectiveness in the way assessment is used in the classroom to promote learning can raise students' achievement progress.

Generalist teachers are frequently a feature of middle schools and middle schooling approaches. Once again, evidence for the efficacy of generalist teachers over subject specialists is lacking.

A related approach is that of curriculum integration in the middle years rather than traditional discrete subjects. Research indicates that while there can be some slight gains in areas such as student behaviour, attendance and motivation through interdisciplinary approaches, there are also logistical and planning difficulties for teachers. Much of the claims for positive outcomes for interdisciplinarity are unsubstantiated by research.

In considering middle school initiatives targeted at specific groups of students such as Indigenous and those from poorer socio-economic backgrounds, success is chiefly determined, once again, by the quality of teaching. High expectations, cultural sensitivity and awareness, and targeted professional learning have all been found to enhance the educational achievement of hitherto underperforming students.

As well as teacher professional learning, another key factor in creating an environment where teachers can teach and their students can learn is that of educational leadership. Effective educational leaders place students and their development at the centre of the school and support the professional learning of staff. They create a climate of high expectations, professional behaviour and accountability to set in place an upward cycle of improvement.

6.0 RESPONSES TO THE ISSUES AND PERCEIVED PROBLEMS: DOES MIDDLE SCHOOLING MAKE A DIFFERENCE ?

6.1 Preliminary Comments

Responses to the issues of *middle schooling* have ranged from the adoption of single strategies or interventions to totally integrated approaches, although the latter is more challenging and less common (Hill & Russell, 1999). Whilst data on student achievement and phenomena such as suspension and absenteeism are fairly readily available, linking these outcomes to matters such as curriculum, pedagogy, assessment and school organisation is more difficult (e.g., NT COGSO, 2005: 3).

One of the issues with attempting to measure the outcome of any intervention is that it is difficult to distinguish the effect of that initiative from the many activities that schools will be undertaking in the middle years at any time. For example, measuring and quarantining the effect of an initiative intended to improve boy's literacy implemented in Year 7 from the effects of 'general' learning and development will be difficult, given that literacy is the basis of all subject areas and that reading and writing occur outside school.

Multiple, overlapping initiatives complicate any attempt at obtaining evidence of effectiveness. A further problem occurs where more than one school is implementing an initiative, often from a centrally determined (systemic) and supported program (Elsworth, Kleinhenz & Beavis, 2004). In this case, there is frequently a range in program 'take up' and thus effect. Some schools will be 'early adopters' and will enthusiastically take up and support an initiative, whilst other schools will do only the minimum in supporting and driving the intended change. Thus, in measuring or evaluating the overall outcome of any initiative, there is likely to be a wide range of both adoption and impact (Aubusson, Brady & Dinham, 2005).

6.2 The Importance of Teacher Professional Learning

Another problem with evaluating and measuring the effectiveness of interventions geared towards issues and problems in the middle years is that school staff frequently lack the skills, time and resources to accomplish these tasks. Longitudinal data on student achievement and how these relate to any initiative are also difficult to obtain and measure, with the result that there is often an initial 'halo' or 'Hawthorne' effect, with judgements of success and failure based largely on teachers' perceptions, rather than on evidence linking interventions to measurable student achievement outcomes (Aubusson et al., 2005; Elsworth et al., 2004).

Teacher professional development is vital in the success of any initiative or intervention. Teachers need time, space and external assistance if a strategy is to have a realistic chance of success. Reluctance of teachers (and schools) to change, poor preparation for and 'selling' of the change, together with imposition of extra responsibilities, can all put a brake on the success of new programs and approaches (Aubusson, Steele, Dinham & Brady, 2007). What many empirical studies have demonstrated is that change management can be as important as the nature of the change itself. There can also be problems with mandated versus voluntary and self-directed change, the latter often having a greater deal of commitment, empowerment and resultant effectiveness (Dinham, 2007a; Aubusson et al., 2005).

6.3 Responses to Interventions

In considering such interventions, many responses to the perceived challenges and problems of the middle years involve merging or compromising the features of primary and secondary schooling, often in a largely secondary setting. In summary, these include any combination of the following approaches:

- Designated junior secondary schools (e.g., Albany Junior High School, Auckland, established in 2005); establishing separate senior secondary schools/colleges.[29]
- Physically separating junior secondary classes from senior students and teachers, and from primary classes in some cases.
- Use of home rooms to reduce disruption and to establish a richer learning environment, especially in literacy.
- Generalist teachers, team teaching and integrated curricula/inter-disciplinarity.
- Flexible learning spaces and a more open attitude breaking down the isolation of the individual classroom.
- More holistic view of teaching and learning; meta-cognition.
- Collaboratively designing and assessing/moderating common assessment tasks; 'outcomes based' learning, 'authentic assessment'.
- Data informed decision making; explicit achievement standards and targets.
- Fewer, longer lessons to enable greater depth of treatment and reduce disruption.
- Increased level of pastoral care from a team of teachers who are more available and who 'follow' students as they progress through the school.
- Consistent follow-up and early intervention in problems through procedures and teacher communication and cooperation.
- Efforts to increase student engagement through such means as 'student centred learning' and focussing more on perceived needs and interests of students.
- More frequent, better informed feedback to students and parents.
- Sharing student performance and other data with feeder primary schools – knowing students better as people and learners; more effectively understanding and meeting their needs.
- Explicit, high behavioural standards.

In reviewing the research evidence in favour of *middle schooling*, the Northern Territory Council of Government School Organisations concluded (2005: 3):

[29] The establishment of junior secondary schools and senior secondary colleges is not always for pedagogic reasons alone. At times, demographic, financial and marketing concerns drive the establishment of middle schools. For example, where a number of nearby 7-12 schools are experiencing poor post-compulsory retention and declining student numbers in the senior years, the response in places such as Western Sydney public schools has been to 'cut the top off' three or four schools to make them 7-10 schools and to designate another of their number an 11-12 or 7-12 secondary school, thereby providing a critical mass in the senior secondary years previously lacking. Thus, demographic shifts can influence moves to and away from middle schooling. Another factor in the establishment of middle schools could well be commercial, i.e., a marketing strategy on the part of a non-government school.

- There is little research evidence available in Australia on the effect of middle schooling on student outcomes. Most of the numerous studies published consist of advocacy or focus on student and teacher attitudes rather than actual outcomes for students. Little data has been collected on the effect on student achievement.
- The research studies generally show that teachers believe that the introduction of middle schooling practices has improved student engagement and attitudes to learning. There is also evidence of gradual change in teaching practices.
- Few research studies have been conducted in Australia or elsewhere on specific practices associated with middle schooling and few have been conducted on a sound methodological basis. However, they indicate that:
  - Interdisciplinary team teaching is a promising practice that has a positive effect on the achievement of middle school students. Students in schools using this practice have higher achievement and engagement than students in more traditional schools;
  - Project-based learning seems to be equivalent or slightly better than other models of instruction for producing gains in general academic achievement and for developing lower-level cognitive skills. Students and teachers believe that project based learning is beneficial and effective;
  - A considerable number of studies demonstrate that co-operative learning methods produce higher achievement than competitive and individualistic learning;
  - The effect of flexible scheduling on student motivation and achievement appears to be inconclusive;
  - Keeping groups of students together for two or more years with the same teachers seems to be a promising practice to improve teacher-student relationships and student attitudes to school;
  - Little is known about the effectiveness of student advisory programs, but they appear to be a promising although unproven practice to promote a positive school climate.
- More research is needed to determine how middle schooling practices might best be implemented in different circumstances.

Furthermore, with specific reference to 'at risk' students, Bahr and Pendergast (2007: 61) assert:

> The literature suggests that interventions with young people at risk must be evidence-based with clear aims and consistent delivery. A cognitive behavioural approach with varied activities and strategies has been found to be most effective with well-trained and committed staff, and ongoing evaluation of the program's effectiveness.

These comments lead to the specification of perceived requirements for successful middle school initiatives.

6.4 Section Summary

One of the difficulties associated with measuring the efficacy of middle schools and middle schooling is that frequently a whole range of structures and approaches are implemented in an ad hoc fashion. Multiple, overlapping initiatives complicate any attempt at obtaining evidence of effectiveness.

This section summarises many of these responses or interventions. No attempt is made to measure or describe the efficacy of any of these.

Research has confirmed that many of these approaches are desirable and can be effective in the overall context of quality teaching. However, each needs to be considered in the

broader context of the school and the teaching and learning environment. None of these interventions is likely to be effective if introduced in isolation.

7.0 PERCEIVED REQUIREMENTS FOR SUCCESSFUL MIDDLE SCHOOL INITIATIVES

7.1 Key Requirements

The literature is clear, that more than simply being a structural or organisational response to the perceived issues surrounding adolescence, *middle schooling* should be considered an educational and pedagogic response. In summary, based on the published literature to date, the following aspects of *middle schooling* - and it could be argued - any form of effective schooling, have been advocated:

Teachers need greater knowledge/skills/capacity in:

- Pedagogy, teaching strategies and quality teaching frameworks.
- Curriculum development and connecting what is taught with the wider world.
- Student learning in other areas of the curriculum.
- Assessment (monitoring, evaluation, diagnosis from evidence).
- Measuring and tracking student performance; gathering, using and interpreting data.
- Planning, implementation and evaluation.
- Cultural sensitivity and accommodation.
- Meeting needs of individual students and students at risk
- Pastoral care, communication, feedback
- Improved teacher-student relations.
- Focussing on students as learners and people.
- Identifying and meeting their own learning needs; a willingness to learn; professional development.
- Collaboration with peers, flexibility and risk taking.
- Structured, critical reflection.
- Middle years targeted professional development to achieve the above.

Students need greater knowledge/skills/capacities in:

- Literacy, which is fundamental to learning and achievement.
- Numeracy.
- General learning.
- Thinking and problem solving skills.
- Engagement with learning, participation, attendance, retention.
- Achievement and confidence in learning.
- Reflection, self-awareness.
- Responsibility for own learning; self-direction and discipline; time management.

Parents need greater:

- Feedback and accessibility to staff and school.
- Information on student achievement and development; clearer more regular reporting.

- Information and understanding about school programs and levels of performance.
- Demonstration to, and by them, of the value of education.
- Opportunity for input, although many will not want this.

Other school needs identified in successful *middle schooling* and educational change research literature include:

- Greater focus on transitions, liaison and productive linkages with feeder primary schools and upper secondary schools and teachers based upon mutual understanding and respect.
- Building on known strengths and existing programs.
- Freeing up staff with time for planning, professional learning, evaluation, etc.; funding and other resources for these purposes.
- Distributed leadership under project leaders.
- Project teams and working parties, especially for discrete projects.
- Communication about program; sharing progress and 'success'.
- For more diverse and ambitious approaches, formal means of planning, coordination, learning, data gathering and evaluation are necessary.
- Improved horizontal (across years) and vertical (between years) communication and understanding..
- Targeting of new key staff where necessary.
- Attention to staffing middle years; may need to prioritise over upper secondary years to enable 'best staff' in middle years.
- Demonstrated support from leadership at the 'top'.
- ICT has a role to play both for administration and learning.
- Cross faculty cooperation is important.
- Well understood and consistently applied student welfare and discipline system underpin academic achievement.
- Getting started and maintaining momentum are both difficult and necessary.
- Peer observation of teaching using some form of quality teaching framework for feedback can be highly effective, yet there are fears about this from some staff, who see it as judgemental rather than developmental.
- A strong research and evidence base for change.
- Overall, professional learning and leadership appear key factors in transforming teaching in the middle years (Dinham, 2007b).

To offer another perspective, the National Middle School Association of the USA identified 14 characteristics/precursors of successful middle schools (NMSA website):

1. Educators who value working with this age group and are prepared to do so.
2. Courageous, collaborative leadership.
3. A shared vision that guides decisions.
4. An inviting, supportive, and safe environment.
5. High expectations for every member of the learning community.
6. Students and teachers engaged in active learning.

7. An adult advocate for every student.
8. School-initiated family and community partnerships.
9. Curriculum that is relevant, challenging, integrative, and exploratory.
10. Multiple learning and teaching approaches that respond to student diversity.
11. Assessment and evaluation programs that promote quality learning.
12. Organizational structures that support meaningful relationships and learning.
13. School-wide efforts and policies that foster health, wellness, and safety.
14. Multifaceted guidance and support services.

7.2 Dysfunctional Consequences of Middle Schooling Initiatives

As noted above, two key factors in the success of any school change or initiative are leadership and teachers' professional learning. These elements need to be combined with accepted principles for organisational and educational change. Elsworth et al. (2004: 74) noted a number of unintended, negative consequences in their evaluation of a middle years reform program in Victoria, Australia. These were associated with:

- Reluctance to change, e.g., from typical subject approaches to integrated approaches;
- Insufficient funding, especially for teacher release and professional engagement and learning;
- Increase in workload associated with change;
- Time constraints generally;
- Expectations of change not met and targets fall short; and
- Timetabling and/or staffing difficulties.

In addition to the above, one of the major dysfunctional consequences of prevailing middle school reform initiatives is the tendency by school leaders and teachers to focus unduly on the so-called 'developmental needs' and 'problems' of adolescent students – often at the expense of students' teaching and learning needs for achievement progress and 'growth'. In this context, it is helpful to note what students themselves nominate as key characteristics of 'good teaching', and 'effective teachers' in particular. For example, evidence cited in the NSW *Report of the Review of Teacher Education* (Ramsey, 2000: 12) indicates that students (and especially adolescents) want their teachers to:

- know and understand their subject(s);
- treat each student as an individual;
- make learning the core of what happens in the classroom; and
- manage distractions that disrupt and prevent learning.

From the work of Rowe and Rowe (1999, 2002), Slade (2002),[30] Slade and Trent (2000), students consistently report that 'good teachers' are those who:

- "Care about me and encourage me";
- "Know what they are teaching and help me to learn";

[30] From extensive interview data, Slade (2002: 175-177) provides a list of 68 characteristics and practices of 'good teachers' reported by students. The chapter in which this list is provided (Chapter 10) is compelling reading that in our view should be compulsory for teacher education courses.

- "Are enthusiastic about what they teach and want me share in their enjoyment of learning"; and
- "Are *fair*" [This is a particularly salient issue for boys at any school-age level in consequence of what is demonstrably shown to be a highly developed sense of 'injustice'].

7.3 Current Concerns and Future Directions for Reform

Pendergast (2005: 18-19) has provided a succinct account of both current concerns and future directions for reform in *middle schooling*:

1. As a concept, middle schooling is annoyingly nebulous – it is a slippery concept. There is no single definition, no template, no formula for middle schooling. Even the terms used … appear to lack coherence and agreed definition. …
2. There appear to be some commonly agreed middle school practices, but these are not exclusive to middle schooling.
3. Middle schooling reform does not exist in isolation, making it difficult to implement, explore and determine outcomes and efficacy.
4. Middle schooling is consistently constructed as being about rethinking education that meets the needs of young people in a changing world.
5. While middle schooling has achieved debutante status in terms of acceptance as a reform platform, policies, positions, their implementation and evaluation are very much in their infancy; so many educators are working on anecdotal evidence, gut feeling and good faith.
6. Middle schooling will affect later phase learning if it achieves its goals.
7. Middle schooling is not about implementing a three-tiered school structure. It is about a unique philosophy, with concomitant changes in pedagogy, curriculum and assessment. These changes are not about repackaging, but about a new way of doing.
8. Middle schooling means change for teachers.
9. Middle schooling is complex, site-specific and requires sustained, systemic reform.
10. Middle schooling is here to stay – there is widespread evidence that middle schooling is a legitimate place in our education system. Regardless of this however, champions of middle schooling are required at all junctures: in schools, in systems, and especially in universities, where academic, research-based evidence is required.

The present authors strongly endorse Pendergast's (2005) account, particularly the requirement of 'research-based evidence'. For any system/country, including New Zealand, the need for findings from strong evidence-based research to inform both policy and practice in educational provision is not an option — it is an imperative. To do otherwise would be irresponsible, and impossible to justify to succeeding generations of teachers, students, parents and to entire national communities.

Yecke concluded from her review of middle schooling in the USA that "Middle schoolism is based on pseudo-scientific theories and downplays academic achievement". However she also concluded that "Middle schools can be high-performing educational institutions … The essential problem with middle schoolism is not grade configuration but educational ideology. However a school is structured, in the era of standards and accountability, it must focus first and foremost on students' acquisition of essential academic skills and knowledge" (2005: i-iv).1

7.4 Section Summary

As with the previous section, this section brings together the perceived requirements for successful Middle School initiatives identified in the literature. Again, these are provided as a matter of record.

The literature is clear in advocating middle schooling approaches focussing on quality teaching and enhanced learning rather than on structural arrangements. Each initiative may be considered desirable and valid but needs to be incorporated and implemented as part of an overall school approach to educational change, quality teaching and improvement in educational outcomes.

A number of possible dysfunctional consequences of middle schooling initiatives include those associated with reluctance to change, insufficient funding, lack of time for teacher release and professional learning, increase in workload, and other difficulties associated with existing school organisation.

Current concerns about middle schooling centre on the lack of agreement as to what middle schooling and middle schools encompass. There is general agreement that middle schooling is not about implementing a three-tiered school structure but is more about rethinking schools and teaching to better meet the needs of young people in a changing world. Many middle schooling initiatives have been implemented more on the basis of blind faith and hope than hard evidence for their efficacy.

Overall, the quality of teaching that students encounter will be the major in-school influence on their educational achievement. Moreover, the desire for enhanced quality of teaching is exercising the minds of educators and stakeholders at every level of education from early childhood to postgraduate university level.

8.0 CONCLUDING REMARKS

8.1 General

The present review has identified many intended functions and features of *middle schooling* articulated in numerous reports, and by interest groups and commentators. At the *prima facie* level, these features and practices seem valid and valuable, at least intuitively. However, a persistent question arising from the available published literature is that of the uniqueness and 'special case' of the middle years. While it is undoubtedly the case that adolescence is a critical, turbulent time in the lives of young people, many of the concerns raised about schooling in the middle years have equally valid application to other stages of educational provision, as do proposed solutions and approaches to these challenges and problems.

The features and outcomes of effective *middle schooling* have been identified from investigations that typically employ mixed methods, although case study and qualitative research methods tend to predominate. This is not to deny either the value or 'legitimacy' of such work. Indeed, this work has provided rich insights into what Rohl, House et al. (2000) in a related context responsibly refer to as: "What *seems* to work in schools". Nevertheless, in the absence of strong evidence-based research findings, yielding estimates of effect-sizes for claims of 'improved student learning outcomes' due to specific middle school reform initiatives, such claims may amount to little more than the optimistic rhetoric of its advocates, gatherers and purveyors, with neither generalizability nor ecological validity beyond the cases investigated and reported.

Additionally, much writing on *middle schooling* is published in practitioner journals, typically single-school case studies of a few pages, of which there have been literally thousands world-wide since the 1980s. Without attempting to devalue the substance of these publications (which are often first-hand records written with situation-specific knowledge and great enthusiasm), two characteristics common to many of these accounts of *middle schooling* are: (1) a lack of empirical data to demonstrate claimed changes to student achievement and engagement, and (2) a lack of student (and parent) voice in most cases: "Much of it has been advocacy rather than objective research and critique … there has been little evidence-based research on student outcomes from middle schooling practices" (NT COGSO, 2005: 29).

As noted, there is often great enthusiasm on the part of teachers and professional associations for *middle schooling* structures and initiatives, despite some of the difficulties and constraints outlined previously in this review. A great deal of effort can go into the transformation to or formation of a middle school (e.g., for a relevant New Zealand case study see Kenny & Quigley, 2006). Almost inevitably, however, research studies are tentative about their conclusions on the effects of *middle schooling* initiatives on student achievement outcomes (Chadbourne, 2001: iv).

Whereas there is some agreement on enhanced student engagement with learning, and greater engagement with broader school activities, it is difficult to find evidence for improved student achievement beyond teachers' hopes, observations and perceptions. In their account of the early stages of the establishment of Orewa College in New Zealand, a Year 9-13 school which became a Year 7-13 school with a Year 7-10 middle school in 2005, Kenny and Quigley (2006: 41) noted:

> The establishment of the middle school (we hope) has given the students a target for one phase of their education, and the chance to be a senior in the school at a stage in

> life when the need to take on some responsibility and leadership can be a motivational and focusing event.

To further illustrate this situation, in their evaluation of the Middle Years Reform Program (MYRP) in Victorian schools, Elsworth et al. (2004: 128, 134) stated:

> We can confidently assert that there were extremely positive outcomes in the areas of student engagement, attendance, retention, literacy and numeracy, and teachers' professional growth in the case study schools between 2001 and 2003. MYRP played a role in the achievement of these outcomes but the extent to which they can be directly attributed to MYRP remains problematic.
>
> Notwithstanding the widespread belief among schools that MYRP activities had positive impacts on student engagement and literacy achievement, these results should be interpreted with extreme caution. … A strong claim for the validity of the school judgements of an increase in literacy achievement cannot, therefore, be sustained.

Similarly, in its review of the evidence for *middle schooling*, the ACT Department of Education and Training (2005: 38) stated:

> This review addresses the literature on the history and practices of middle schooling within Australia, the United States, the United Kingdom, Japan and Finland. The focus has been to source material which documents the successes and failures of middle schooling.
>
> The findings of the review are inconclusive. To date, the review has found there is insufficient comparable data to establish whether student academic outcomes have been enhanced as a result of middle schooling practices, since many localities and countries have not pursued consistent methods in collecting, analysing and interpreting data.

Thus, despite the large and burgeoning literature claiming positive effects of *middle schooling* approaches that focus on the cognitive, developmental, social and emotional needs of adolescents, evidence to substantiate the claims remain elusive.

8.2 Barriers to Reform

Unfortunately, there continue to be several barriers to middle school reform that: (1) perpetrate prevailing 'myths' of *educational effectiveness* (or 'ineffectiveness'); and (2) generate misinformed and/or misdirected rationalisations of students' differential experiences and outcomes of schooling. Perhaps the most pervasive of these is the widespread tendency to place undue credence on various outmoded and moribund forms of *biological* and *social determinism* (as noted earlier) which assume that individual students – whether they be males or females – do poorly or well because of developmental differences, because they are 'dumb' or 'smart' or come from 'disadvantaged' or 'advantaged' backgrounds. In this context, Edmonds (1978: 33) long ago made the following comment:

> The belief that family background is the chief cause of the quality of student performance … has the effect of absolving educators of their professional responsibility to be instructionally effective.

The longstanding and widespread acceptance of these ideological beliefs and their expectations at the teacher, school/university and system levels have little substantive justification in the light of findings from both existing and emerging evidence-based research. The findings do, however, provide strong support for the proposition that it is the identity of the class-teacher groups to which students are assigned that is a key determinant of their perceptions and experiences of schooling, as well as their

achievement progress and behaviours in the classroom. For example, Professor David Monk (1992: 320) cites a number of studies in support of the observation that:

> One of the recurring and most compelling findings within the corpus of production function research is the demonstration that how much a student learns depends on the identity of the classroom to which that student is assigned.

More recently, and consistent with the longitudinal research findings reported by Hill and Rowe (1996, 1998) and by Rowe and Hill (1998), Cuttance (1998: 1158-1159) concluded:

> Recent research on the impact of schools on student learning leads to the conclusion that 8-15% of the variation in student learning outcomes lies between schools with a further amount of up to 55% of the variation in individual learning outcomes between classrooms within schools. In total, approximately 60% of the variation in the performance of students lies either between schools or between classrooms, with the remaining 40% being due to either variation associated with students themselves or to random influences.

Likewise, from the related British research, Müijs and Reynolds (2001: vii) report:

> All the evidence that has been generated in the school effectiveness research community shows that classrooms are far more important than schools in determining how children perform at school.

These studies consistently find that differences between schools, when relevant prior achievement and 'intake' characteristics of students are taken into account, are important but not especially large – a finding that is confirmed by results from comprehensive meta-analytic studies by Bosker and Witziers (1995), Hattie (2003), and by the work of Marks (2005, 2006). Furthermore, they are of an order of magnitude close to that estimated by the influential work of Coleman et al. (1966), and subsequently by Jencks et al. (1972); i.e., ~ 9 per cent of the variance. At the same time, those studies that have been designed to enable the estimation of class-level effects have consistently identified larger proportions of between-class/teacher variance.[31]

This, in turn, has prompted a renewed focus on *teacher quality* and *instructional effectiveness*, and to some re-definition of fundamental questions that have underpinned educational effectiveness research since the early 1990s (e.g., Akiba, LeTendre & Scribner, 2007; Creemers, 1992, 1994a,b, 1997; Slavin, 1994, 1996, 2005). Based on secondary data analyses from the 2003 *Trends in International Mathematics and Science Study* (TIMSS) across 46 countries, Akiba, LeTendre and Scribner (2007: 369) conclude: "These analyses provide empirical, cross-national evidence of the importance of investing in teacher quality for improving national achievement."

In sum, teachers can and do make a difference – regardless of students' social backgrounds and 'intake' characteristics, and whether or not they experience learning difficulties (Cuttance, 2001; Rowe, 2004b; Rowe & Rowe, 2002). As Slavin and colleagues' evaluations of the 'Success for All' program among low socioeconomic schools in Baltimore and Philadelphia have shown, students who, regardless of their gender, socio-economic or ethnic backgrounds are taught by well-trained, strategically focused, energetic and enthusiastic teachers, are fortunate indeed (Slavin, 1996, 2005).

[31] See, for example: the *ILEA Junior School Project* reported by Mortimore *et al.* (1988); the re-analysis of IEA data reported by Scheerens, Vermeulen and Pelgrum (1989); findings from the *Victorian Quality Schools Project* (Hill et al., 1993, 1996; Hill & Rowe, 1996, 1998; Rowe & Hill, 1998; Rowe, Hill & Holmes-Smith, 1995; Rowe & Rowe, 1999); key results from the *VCE Data Project* (Rowe, Turner and Lane, 2002); and the meta-analytic synthesis of related research by Hattie (2003).

8.3 What Matters Most ?

So what matters most? Certainly not student compositional characteristics such as *learning difficulties, educational disadvantage*, *disruptive student behaviours*, nor school *structural* arrangements of interest to advocates of *middle schooling*, nor to school effectiveness researchers, but the imperative of *quality teaching* and *learning* provision, supported by *teaching standards* and ongoing teacher professional development focused on evidence-based practices that are demonstrably effective in maximising students' learning outcomes and achievement progress.

While it is not feasible to legislate such *quality teaching* into existence, the fact that teachers and teaching make a difference should provide impetus and encouragement to those concerned with the crucial issues of *educational effectiveness, quality teaching* and *teaching standards*, to at least invest in quality teacher recruitment, pre-service education and on-going professional learning. In this regard, the work of the National Board for Professional Teaching Standards (NBPTS) in the USA,[32] including the contributions of Ingvarson and of Bond et al. (2000), are of vital importance. For example, Ingvarson has long been an advocate for the necessity of establishing *teaching standards*, the *certification of highly accomplished teachers*, as well as strategic *teacher professional development* that are linked to both status and salary recognition (Ingvarson, 2001, 2002, 2005; Ingvarson, Elliot et al., 2006).

Finally, the summary of findings from evidence-based research for the effects of *quality teaching* on student outcomes provided by Professor Linda Darling-Hammond at Stanford University are pertinent and require emphasis:

> The effect of poor quality teaching on student outcomes is debilitating and cumulative. … The effects of quality teaching on educational outcomes are greater than those that arise from students' backgrounds. … A reliance on curriculum standards and statewide assessment strategies without paying due attention to teacher quality appears to be insufficient to gain the improvements in student outcomes sought. … The quality of teacher education and teaching appear to be more strongly related to student achievement than class sizes, overall spending levels or teacher salaries (Darling-Hammond, 2000: 3).

For the sake of students and teachers, let alone the social and economic future of any nation, the enduring hope is that the importance of *quality teaching* (pedagogical knowledge and practice) will be evident in the reality of major improvements to teacher professionalism and students' learning, behaviour, health and wellbeing outcomes. But such reality will not be realised until teachers are at least in receipt of quality, evidence-based, pre-service education and in-service professional development support that are commensurate with their essential status in terms of the invaluable contributions they are able make to the enrichment of students' wellbeing and life chances, as well as to capacity-building for national social and economic futures (e.g., Cochran-Smith & Zeichner, 2005; Darling-Hammond & Bransford, 2005).

As indicated earlier, the realisation must be that since teachers are the most valuable resource available to schools, an investment in teacher professionalism is vital by ensuring that they are equipped with a repertoire of pedagogical skills that are demonstrably effective in meeting the developmental and learning needs of ALL students for whom they have responsibility. Perhaps there is a need to be reminded that: "Ultimately, most of what we do in school education – including our efforts to

[32] See: www.nbpt.org/standards/stds.

improve administrative structures and the quality of the teaching-learning environment – can be judged in terms of their implications for enhanced student learning" (Masters, 1994: 2). Clearly, the key to such *educational effectiveness* at all levels of schooling (and especially during the early and middle years) involves an operational understanding of the fundamental importance of evidence-based teaching practices for the provision of quality teaching and learning standards.

8.4 Section Summary

Many of the intended features and functions of middle schooling articulated in numerous reports, and advocated by interest groups and commentators have prima facie appeal. Many have been confirmed as efficacious through general research into effective schooling and quality teaching. However, the special case for middle schools and middle schooling remains unclear.

The present reviewers have engaged with a large literature from diverse sources. Within this literature is a much smaller, evidenced-based literature. While the former is generally positive, and enthusiastically aspirational, the latter tends to be more equivocal and unconvincing about the desirability of middle schools and popularly espoused middle schooling approaches.

Beyond the enthusiasm and advocacy for middle schooling, it is difficult to find evidence for improved student achievement beyond what we know about 'what works' via quality teachers and effective teaching.

Overall, the findings from larger, more rigorous reviews and research projects involving middle schooling are inconclusive. This has not been helped by the fact that many schools, systems and countries have not implemented consistent approaches to middle schooling or the collection, analysis and interpretation of data.

Major barriers to reform of schooling in the middle years centre on the preoccupation with structural arrangements and conditions of teachers' work such as class sizes, teachers salaries, and school organizational arrangements as ways of driving educational improvement. A second barrier lies with the widespread tendency to stigmatise and categorise students of certain backgrounds. Various forms of biological and social determinism condemn many students to an education characterised by low expectations and self-fulfilling prophecies for lack of success.

The one area where the research evidence is unequivocal is that of the critical importance of the quality of classroom teaching. Teacher quality, teachers' professional learning supported by educational leadership are the keys to enhancing achievement for all students. Teachers can and do make a substantial difference – underscoring the fundamental importance of evidence-based teaching practices for the provision of quality teaching and learning standards. On that, the evidence is clear and incontrovertible.

References

ACER (2005a). *Progressive Achievement Tests in Reading: Comprehension and vocabulary* (3rd edition). Camberwell, VIC: Australian Council *for* Educational Research [ISBN 0 86431 384 5].

ACER (2005b). *Progressive Achievement Tests in Mathematics* (3rd edition). Camberwell, VIC: Australian Council *for* Educational Research [ISBN 0 86431 644 5].

Akhter, S., & Hamilton, R. (20?). Motivation in Intermediate School: The role of autonomy, support and belonging.

Akiba, M., LeTendre, G.K., & Scribner, P. (2007). Teacher quality, opportunity gap, and national achievement in 46 countries. *Educational Researcher, 36*(7), 369-387.

Alton-Lee, A. (2002). *Quality teaching: Impact of teachers and schools on outcomes.* Wellington, NZ: Ministry of Education.

Alton-Lee, A. (2003). *Best Evidence Synthesis: Quality Teaching for Diverse Students in Schooling*. Available at: http://educationcounts.edcentre.govt.nz/publications/curriculum/bes-qua-tea-diverse.html.

Alton-Lee, A. (2005). *Overview of key messages from quality teaching for diverse students in schooling: Best evidence synthesis*. Ministry of Education, Wellington, New Zealand: Available for download at: http://educationcounts.edcentre.govt.nz/goto/BES.

Alton-Lee, A. (2007). The Iterative Best Evidence Synthesis Programme, New Zealand. In CERI, *Evidence in Education: Linking research and policy* (pp. 71-79). Paris: Centre for Educational Research and Innovation, Organisation for Economic Co-operation and Development.

Alton-Lee, A., & Rowe, K.J. (2007). *Policy Brief: Impact of teachers and schools on variance in student outcomes.* Wellington, NZ: Iterative Best Evidence Synthesis Programme, Ministry of Education. Available at: http://educationcounts.edcentre.govt.nz/goto/BES.

Anthony, G., & Walshaw, M. (2007). *Effective Pedagogy in Mathematics/Pāngarau*. Ministry of Education, NZ: Best Evidence Synthesis Iteration. [PDF ISBN 0 478 1375 0]. Available at: http://educationcounts.edcentre.govnt.nz/goto/BES.

APA (1994). *DSM-IV*: *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.

Ariès, Phillipe (1973). *Centuries of childhood*. Harmondsworth, UK: Penguin.

Assessment Reform Group. (1999). *Assessment for Learning Beyond the Black Box*. Available at: http://arg.educ.cam.ac.uk/publications.html

Aubusson, P., Brady, L., & Dinham, S.K. (2005). *Action Learning: What Works?* A research report prepared for the New South Wales Department of Education and Training. Sydney, NSW: University of Technology Sydney.

Aubusson, P., Steele, F., Dinham, S.K. & Brady, L. (2007). Action learning in teacher learning community formation: informative or transformative? *Teacher Development*, *11*(2), 133-148.

Augustine, C., Juvonen , J., Le, V-N., Kaganoff, T., & Constant, L. (2004). P*roblems and Promise of the American Middle School*. Rand Corporation. Available for download at: http://www.rand.org/pubs/research_briefs/RB8025/index1.html.

Australian Capital Territory Department of Education and Training (2007). *Authentic Assessment Practice*. Canberra, ACT DET. Available at: http://www.det.act.gov.au/publicat/sei_qt_authentic.htm

Australian Capital Territory Department of Education and Training. (2005). *Teaching and Learning in the Middle Years in the ACT*. Canberra: ACT DET.

Ayres, P., Dinham, S.K., & Sawyer, W. (2004). Effective teaching in the context of a Grade 12 high stakes external examination in New South Wales, Australia. *British Educational Research Journal*, *30*(1), 141-165.

Bahr, N., Bahr, M. & Keogh, J. (2005). *Interdisciplinarity vs disciplinarity: Developing knowledge for problem solving in middle years of schooling*. Paper presented at the Australian Curriculum Studies Association conference, University of the Sunshine Coast, 21-23 September, 2005.

Bahr, N., & Pendergast, D. (2007). The *Millennial Adolescent*. Camberwell, VIC: ACER Press.

Bangert-Drowns, R. L., Hurley, M.M., & Wilkinson, B. (2004). The effects of school-based writing-to-learn interventions on academic achievement: A meta-analysis. *Review of Educational Research, 74(*1), 29.

Barkley, R.A., & Pfiffner, L.J. (1995). Enhancing education at school and at home: Methods for success from kindergarten through Grade 12. In R.A. Barkley, *Taking charge of ADHD: The complete authoritative guide for parents* (pp. 222-239). New York: Guilford.

Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance abuse. *Journal of Early Adolescence*, *11*(1), 62.

Beane, J. (2005). *Organising the middle school curriculum*. National Middle Schooling Association. Available at: http://www.nmsa.org/Publications/WebExclusive/Organizing/tabid/651/Default.aspx.

Bernard, M.E., Stephanou, A., & Urbach, D. (2007). *ASG Report on Student Social, Emotional Health and Wellbeing*. A report of a research project commissioned by the Australian Scholarships Group (ASG). Camberwell, VIC: Australian Council *for* Educational Research.

Biddulph, F., Biddulph, J., & Biddulph, C. (2003). *The Complexity of Community and family Influences on Children's Achievement in New Zealand: Best Evidence Synthesis*. Wellington, NZ: Ministry of Education.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policies and Practice, 5*(1), 7-74.

Blatchford, P., & Mortimore, P. (1994). The issue of class size for young children in schools: What can we learn from research? *Oxford Review of Education, 20*, 411-428.

Bond, L., Smith, T., Baker, W., & Hattie, J.A. (2000). *The certification system of the National Board for Professional Teaching Standards: A construct and consequential validity study*. Greensboro, NC: Center for Educational Research and Evaluation.

Boomer, G., Lester, N., Onore, C., & Cook, J. (1994). *Negotiating the curriculum: Educating for the 21st Century*. London: Falmer.

Bosker, R.J., & Witziers, B. (1995, January). *School effects: Problems, solutions and a meta-analysis*. Paper presented at the 8th International Congress for School Effectiveness and Improvement, CHN, Leeuwarden, The Netherlands, January 3-6, 1995.

Brown, K.M., Roney, K., & Anafra, Jr., V.A. (2003). Organizational health directly influences student performance at the middle level. *Middle School Journal, 34*(5), 5-15.

Burns, T., & Schuller, T. (2007). The evidence agenda. In CERI, *Evidence in Education: Linking research and policy* (pp. 15-32). Paris: Centre for Educational Research and Innovation, Organisation for Economic Co-operation and Development.

Carrington, V., Pendergast, D., Bahr, N., Mayer, D., & Mitchell, J. (2002). Education futures: Transforming teacher education (re-framing teacher education for the middle years. *Proceedings of the 2001 National Biennial Conference of the Australian Curriculum Studies Association*. Canberra: ACSA.

Carroll, D., Featherstone, H., Featherstone, J., Feiman-Nemser, S., & Roosevelt, D. (2007) (Eds). *Transforming Teacher Education Reflections from the Field*. Cambridge, MA.:Harvard Education Press.

CCCH (2004). "*Let's Read" literature review*. Parkville, VIC: Centre for Community Child Health. Available at: www.rch.org.au/ccch/research.

Center on Education Policy (2003). *State and federal efforts to implement the No Child Left Behind Act*. Washington, DC: Author.

CERI (2007). *Evidence in Education: Linking research and policy*. Paris: Centre for Educational Research and Innovation, Organisation for Economic Co-operation and Development.

Chadbourne, R. (2001). *Middle schooling for the middle years: What might the jury be considering*? Southbank, VIC: Australian Education Union.

Chadbourne, R. (2003). Middle schooling and academic rigour. *International Journal of Learning,* 10.

Chadbourne, R., & Pendergast, D. (2005). The philosophy of middle schooling. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years: Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Chamberlain, M.C. (2003). The relative performance of girls and boys in Science at Grades 4 and 8 in New Zealand in 1994 and 19998. *Studies in Educational Evaluation, 29*, 259-277.

Cochran-Smith, M., & Zeichner, K.M. (Eds.) (2005). *Studying teacher education: The report of the AERA Panel on Research and Teacher Education*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfield, F., & York, R. (1966). *Equality of educational opportunity*. Washington, DC: U.S. Government Printing Office.

Cook, T.D. (2002). Randomized experiments in educational policy research: A critical examination of the reasons the educational evaluation community has offered for not doing them. *Educational Evaluation and Policy Analysis, 24*(3), 175-199.

Cook, T., & Gorard, S. (2007). What counts and what should count as evidence. In CERI, *Evidence in Education: Linking research and policy* (pp. 33-49). Paris: Centre for Educational Research and Innovation, Organisation for Economic Co-operation and Development.

Creemers, B.P.M. (1992). School effectiveness, effective instruction and school improvement in The Netherlands. In D. Reynolds and P. Cuttance (Eds.), *School effectiveness: Research policy and practice*. London: Cassell.

Creemers, B.P.M. (1994a). *The effective classroom*. London: Cassell.

Creemers, B.P.M. (1994b). Effective instruction: An empirical basis for a theory of educational effectiveness. In D. Reynolds, B.P.M. Creemers, P.S. Nesselrodt, E.C. Schaffer, S. Stringfield & C. Teddlie (Eds.), *Advances in school effectiveness research and practice* (pp. 189-205). Oxford: Pergamon Press.

Creemers, B.P.M. (1997). *Effective schools and effective teachers: An international perspective*. Warwick, UK: University of Warwick, Centre for Research in Elementary and Primary Education.

Crouch, R.H.W. (2006). *Middle school leadership: The role of the Head of middle school*. Unpublished doctoral dissertation, School of Education, The University of Queensland.

Cuttance, P. (1998). Quality assurance reviews as a catalyst for school improvement in Australia. In A. Hargreaves, A. Lieberman, M. Fullan., & Hopkins, D. (Eds.), *International Handbook of Educational Change* (Part Two, pp. 1135-1162). Dordrecht: Kluwer Publishers.

Cuttance, P. (2000). The impact of teaching on student learning. *Australian College of Education Yearbook 2000*. Canberra, ACT: Australian College of Education:

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives, 8*(1); at: http://epaa.asu.edu/epaa/v8n1.

Darling-Hammond, L. (1994). Performance-based assessment and educational equity. *Harvard Educational Review, 64*(1), 5-29.

Darling-Hammond, L., & Bransford, J. (Eds.) (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco, CA: Jossey-Bass.

de Jong, T. (2005). Managing behaviour. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

de Lemos, M. (2002). *Closing the gap between research and practice: Foundations for the acquisition of literacy*. Camberwell, VIC: Australian Council for Educational Research. Available at: www.acer.edu.au/research/Research_reports/documents/deLemos_ClosingTheGap.pdf.

de Lemos, M. (2004a). *Reading instruction in Australian schools: Explanatory notes to accompany Letter to Dr Brendan Nelson, March 2004*. Camberwell, VIC: Australian Council for Educational Research. Available at: http://www.rrf.org.uk/the%20australian%20scene.htm.

de Lemos, M.M. (2004b). Effective strategies for the teaching of reading: What works, and why. In B.A. Knight and W. Scott (Eds.), *Learning difficulties: Multiple perspectives*. Frenchs Forest, NSW: Pearson Education.

DeWatt, D., Berkman, N.D, Sheridan, S., Lohr, K.N., & Pignone, M.P. (2004). Literacy and health outcomes: A systematic review of the literature. *Journal of General Internal Medicine, 19*(12), 1228-1239.

Dinham, S.K. (2005). Principal leadership for outstanding educational outcomes. *Journal of Educational Administration*, *43*(4), 338-356.

Dinham, S.K. (2006). Teaching and teacher education: Some observations, reflections and possible solutions. *ED Ventures*, 2, pp. 3-20.

Dinham, S.K. (2007a). *Leadership for Exceptional Educational Outcomes*. Teneriffe, QLD: Post Pressed.

Dinham, S.K. (2007b). Authoritative leadership, action learning and student accomplishment. *2007 Research Conference Proceedings* (pp. 33-39). Camberwell, VIC: Australian Council *for* Educational Research.

Dinham, S.K. (2007c). How schools get moving and keep improving: Leadership for teacher learning, student success and school renewal. *Australian Journal of Education, 51*(3), 263-275.

Dinham, S.K., & Scott, C. (2007). Parenting, teaching and leadership styles. *The Australian Educational Leader*, *29*(1), 30-32, 45.

Dinham, S.K., Buckland, C., Callingham, R., & Mays, H. (2007). Factors responsible for the superior performance of male students in Years 3 and 5 standardized testing at one Australian Primary School. *Learning and Teaching*, (in press).

Doig, B., & Rowe, K.J. (2002). *Project Good Start*: Effective numeracy practices in the year before school and the first year of school. *Proceedings of the Commonwealth Numeracy Research and Development Initiative* **Numeracy Projects Information Forum** (pp. 115-126). Canberra: Commonwealth Department of Education, Science and Training.

Dole, S. (2005). Numeracy. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Dowden, T. (2007). Relevant, Challenging, Integrative and Exploratory Curriculum Design: Perspectives from theory and practice for middle level schooling in Australia. *The Australian Educational Researcher*, *34*(2), 51-71.

Dowson, M., Ross, M., Donovan, C., Richards, G., & Johnson, K. (2005). *The current state of middle schooling: A review of the literature*. Paper presented to Australian Association for Research in Education annual conference, Parramatta, NSW, 27 November - 1December, 2005.

Edmonds, R. (1978). *A discussion of the literature and issues related to effective schooling*. Paper presented to the National Conference on Urban Education, CEMREL, St. Louis, US.

Education Department of Western Australia (1999). *Annotated Bibliography of Middle Schooling*. East Perth: Education Department of Western Australia.

Education Review Office [New Zealand] (2001). *Students in Years 7 and 8*. Available at: http://www.ero.govt.nz/ero/publishing.nsf/print/Students%20in%20Years%207%20and%208%20-%20National%20Reports.

Education Review Office (2003). *Students in Years 9 and10*. Wellington, NZ: Education Review Office.

Education Review Office. (2007). *The Teaching of Sexuality Education in Years 7-13*. Wellington, NZ: Education Review Office.

Edwards, J. (2000). *The research and realities of teaching and learning in the middle years of schooling*. Background paper to keynote address presented at the Middle Years of Schooling Conference. Melbourne Convention Centre, August 14-16, 2000.

Ellis, L.A. (2005). Balancing approaches: Revisiting the educational psychology research on teaching students with learning difficulties. *Australian Education Review No. 48*. Camberwell, VIC: Australian Council for Educational Research.

Elsworth, G., Kleinhenz, E., & Beavis, A. (2004). *Evaluation of the Middle Years Reform Program*. Melbourne, VIC: RMIT University, and Australian Council *for* Educational Research.

Engelmann, S. (1999). The benefits of Direct Instruction: Affirmative action for at-risk students. *Educational Leadership, 57*(1), 77-79.

Erb, W. (2007). Focus on comprehension: The Secondary Literacy Project (pp. 11-13). *New Zealand Education Gazette*, 5 November 2007.

Farkota, R.M (2003). *The Effects of a 15-minute Direct Instruction Intervention in the regular mathematics class on students' mathematical self-efficacy and achievement*. Unpublished EdD thesis, Monash University, Melbourne. Available for download in PDF format at: http://www.acer.edu.au/about/staffbios/farkota_rhonda.html.

Farkota, R. M. (2005). Basic math problems: The brutal reality! *Learning Difficulties Australia Bulletin, 37*(3), 10-11.

Farrelly, J., & Standish, J. (1996). Consensus statement on ADHD: A summary of the discussion by the delegates to the CEDP scientific retreat on ADHD. *The Australian Educational and Developmental Psychologist, 13*, 79-81.

Fielding-Barnsley, R., & Purdie, N. (2003). Early interventions in the home for children at risk of reading failure. *Support for Learning, 18*, 77-82.

Fitz-Gibbon C.T. (1984). Meta-analysis: an explication. *British Educational Research Journal*, *10*(2), 135-144.

Forster, M., Mendelovits, J., & Masters, G.N. (1994). *Developmental Assessment Resource for Teachers* (DART English). Camberwell, VIC: Australian Council *for* Educational Research.

Freebody, P. (2007). Literacy education in school: Research perspectives from the past, for the future. *Australian Education Review No. 52*. Camberwell, VIC: Australian Council *for* Educational Research.

Fullarton, S. (2002). Student engagement with school: Individual and school-level influences. *Longitudinal Surveys of Australian Youth*, No. 27. Camberwell, VIC: Australian Council *for* Educational Research.

Glass, G.V. (1992). Class size. In M.C. Alkin (Ed.), *Encyclopedia of Educational Research* (pp. 164-166). New York: Macmillan.

Glass, G.V., Cahen, L.S., Smith, M.L., & Filby, N.N. (1982). *School class size: Research and policy*. Beverly Hills: Sage Publications.

Glass, G.V., McGaw, B., & Smith, M.L. (1981). *Meta-Analysis in Social Research*. London: Sage.

Glass, G.V., & Smith, M.L. (1979). Meta-analysis of the relationship between class size and achievements. *Educational Evaluation and Policy Analysis, 1*, 2-16.

Goldstein, H., & Blachford, P. (1997). *Class size and educational achievement*. New York: UNESCO.

Goldstein, H., & Myers, K. (1996). Freedom of information: Towards a code of ethics for performance indicators. University of London Institute of Education.

Goldstein, H., & Spiegelhalter, D. (1996). League tables and their limitations: Statistical issues in comparisons of institutional performance. With discussion. *Journal of the Royal Statistical Society, A, 159*, 385-443.

Goldstein, H., & Thomas, S. (1996). Using examination results as indicators of school and college performance. *Journal of the Royal Statistical Society, A, 159,* 149-163.

Gorard, S., & Fitz, J. (2006). What counts as evidence in the School Choice debate? *British Educational Research Journal, 32*(6), 797-816.

Grady, M. (2007). What Districts can do to Support High Quality Education. *Teachers College Record*, May 7th, available at: http://www.tcrecord.org/Content.asp?ContentId=14474.

Graham, L., Paterson, D., & Stevens, R. (2007). *Exceptional Educational Equity Programs*. Teneriffe, Qld.: Post Pressed.

Haggerty, R.J., Roghmann, K, & Pless, I.B. (Eds.) (1975). *Child Health and the Community*. New York: John Wiley and Sons.

Handelsman, J., Egert-May, D., Beichner, R., Bruns, P., Change, A., DeHaan, R., et al. (2004). Scientific teaching. *Science, 304*, 521–522.

Harder, H. (1990). A critical look at reduced class size. *Contemporary Education, 62*, 28-30.

Harker, R. (2006). *Ethnicity and school achievement in New Zealand: Some data to supplement the Biddulph et al (2003) Best Evidence Synthesis Report to the Ministry of Education*. Palmerston North: Massey University.

Hattie, J.A. (1987). Identifying the salient facets of a model of student learning: A synthesis of meta-analyses. *International Journal of Educational Research, 11*(2), 187-212.

Hattie, J.A. (1992). Measuring the effects of schooling. *Australian Journal of Education, 36*, 5-13.

Hattie, J. (2003). *Teachers make a difference: What is the research difference?* Available at: http://www.acer.edu.au/workshops/documents/Teachers_Make_a_Difference_Hattie.pdf

Hattie, J.A. (2005). What is the nature of evidence that makes a difference to learning? *Research Conference 2005 Proceedings* (pp. 11-21). Camberwell, VIC: Australian Council *for* Educational Research. Available at: http://www.acer.edu.au.

Hattie, J., Biggs, J., & Purdie, N. (1996). Effects of learning skills interventions on student learning: A meta-analysis. *Review of Educational Research, 66*(2), 99-136.

Hattie, J., & Rowe, K.J. (2004). *Review of current indicators constructed using NEMP data: Consultancy report to the New Zealand Ministry of Education*. Auckland, NZ: Faculty of Education, Auckland University; and Camberwell, VIC: Australian Council *for* Educational Research.

Haycock, K. (2004). The real value of teachers: If good teachers matter, why don't we act like it? *Thinking K-16, The Education Trust, 8*(1), 1-43, Winter 2004.

Hedges, L., & Olkin, I. (1985). *Statistical Methods for Meta-Analysis*. New York: Academic Press.

Hill, P.W. (1995). *School effectiveness and improvement: Present realities and future possibilities*. Inaugural Professorial Lecture, Faculty of Education, The University of Melbourne.

Hill, P.W. (1998). Shaking the foundations: Research-driven school reform. *School Effectiveness and School Improvement, 9*, 419-436.

Hill, P.W. (2003). What principals need to know about teaching and learning. In V. Zbar and T. Mackay (Eds.), *Leading the education debate: Selected papers from a decade of the IARTV Seminar Series* (pp. 301-321). Melbourne, VIC: Incorporated Association of Registered Teachers of Victoria (IARTV).

Hill, P.W., & Holmes-Smith, P. (1997). *Class size: What can be learnt from the research?* Paper commissioned by the Department of Education (Victoria). Centre for Applied Educational Research, The University of Melbourne.

Hill, P.W., Jane, G., Mackay, A., & Russell, V.J. (2002). *Middle Years Research and Development (MYRAD) Project*. A report to the Learning & Teaching Innovation Division, Department of Education & Training, Victoria. Melbourne, VIC: Centre for Applied Educational Research, The University of Melbourne.

Hill, P.W., McKay, A.D., Russell, V.J., & Zbar, V. (2001). The Middle-Years. In P. Cuttance, M. Angus, F. Crowther, and P.W. Hill (Eds.), *School Innovation: Pathway to the Knowledge Society* (Chapter 5). A report to DETYA for the Innovation and Best Practice Project. Canberra, ACT: Commonwealth Department of Education, Training and Youth Affairs. Available at:

http://www.dest.gov.au/sectors/school_education/publications_resources/school_innovation.

Hill, P.W., & Rowe, K.J. (1996). Multilevel modelling in school effectiveness research. *School Effectiveness and School Improvement, 7*(1), 1-34.

Hill, P.W., & Rowe, K.J. (1998). Modelling student progress in studies of educational effectiveness. *School Effectiveness and School Improvement, 9*(3), 310-333.

Hill, P.W., & Russell, V.J. (1999). *Systematic, whole-school reform of the middle years of schooling*. University of Melbourne: Centre for Applied Educational Research.

Hills, T. (2007). Is constructivism risky? Social anxiety, classroom participation, competitive game play and constructivist preferences in teacher development. *Teacher Development, 11*(3), 335-352.

Hilton, A. & Hilton, G. (2005). Higher-order thinking. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Hinshaw, S.P. (1992a). Academic underachievement, attention deficits and aggression: Comorbidity and implications for intervention. *Journal of Consulting and Clinical Psychology, 60*, 893-903.

Hinshaw, S.P. (1992b). Externalizing behavior problems and academic under-achievement in childhood and adolescence: Causal relationships and underlying mechanisms. *Psychological Bulletin, 111*, 127-155.

Hoad, K-A., Munro, J., Pearn, C., Rowe, K.S., & Rowe, K.J. (2007). *Working Out What Works (WOWW) Training and Resource Manual: A teacher professional development program designed to support teachers to improve literacy and numeracy outcomes for students with learning difficulties in Years 4, 5 and 6* (2nd edition). Canberra, ACT: Australian Government Department of Education, Science and Training; and Camberwell, VIC: Australian Council *for* Educational Research [ISBN 978-0-86431-766-7]. Available for download in PDF format at: http://www.dest.gov.au/NR/rdonlyres/4781A2FC-A2B4-4C65-88D0-30C5507E4ADE/18998/WOWW2ndEdition.pdf.

Hunt, M. (1997). *How science takes stock: The story of meta-analysis*. New York: Russell Sage Foundation.

Hunter, L. (2007). Editorial: Machinations in the middle. *The Australian Educational Researcher, 34*(2), 1-5. (Middle Years of Schooling, Special Edition).

Hunter, L. & Park, N. (2005). Negotiating curriculum. In D. Pendergast and and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Ingvarson, L.C. (2001). Developing standards and assessments for accomplished teaching: A comparison of recent reforms in the USA and the UK. In D. Middlewood and C. Cardno (Eds), *Developments in Teacher Appraisal.* London: Routledge.

Ingvarson, L. (2002). *Development of a National Standards Framework for the teaching profession*. An Issues paper prepared for the MCEETYA Taskforce on Teacher Quality and Educational Leadership. Camberwell, VIC: Australian Council *for* Educational Research.

Ingvarson, L.C. (Ed.). (2005). *Assessing teachers for professional certification: The National Board for Professional Teaching Standards*. Amsterdam: Elsevier Science.

Ingvarson, L., Elliot, A., Kleinhenz, E., & McKenzie, P. (2006). *Toward a national approach to the accreditation of pre-service teacher education courses*. A discussion paper prepared for Teaching Australia – the Australian Institute for Teaching and School Leadership. Camberwell, VIC: Australian Council *for* Educational Research.

Ingvarson, L.C., & Rowe, K.J. (2007). *Conceptualising and evaluating teacher quality: Substantive and methodological issues*. Background paper to keynote address presented at the Economics of Teacher Quality conference, Australian National University, 5 February 2007. Available at: http://www.acer.edu.au/documents/LP_Ingvarson_Rowe_TeacherQualityFeb2007.pdf.

Jencks, C., Smith, M., Acland, H., Bane, M. J., Cohen, D., Gentis, H., Heynes, B.,& Michelson, S. (1972). *Inequality: A reassessment of the effect of family and schooling in America*. New York: Basic Books.

Jung, H.J. (2007). *Learning to be an individual – Emotion and person in an American Junior High School*. New York: Peter Lang.

Kenny, A., & Quigley, M. (2006). Middle School – changing face of New Zealand education? *Australian Journal of Middle Schooling*, *6*(1), 39-41.

Kirschner, P.A., Sweller, J., & Clark, R.E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of Constructivist, Discovery, Problem-Based, Experimental, and Inquiry-Based teaching. *Educational Psychologist, 4*(2), 75-86.

LaTrice-Hill, T. (2002). *No Child Left Behind Policy Brief: Teaching quality*. Denver, CO: Education Commission of the States. Available at http://www.ecs.org/clearinghouse/

Lawton, D. (1999). Middle schooling: The battle to overcome the obstacles of structure. *The Practicing Administrator, 21*(1), 22-26.

Loader, D. (2007). *Jousting for the New Generation: Challenges to contemporary schooling*. Camberwell, VIC: ACER Press.

Louden, W., Rohl, M., Gore, J., Greaves, D., Mcintosh, A., Wright, R., Siemon, D., & House, H. (2005a). *Prepared to teach: An investigation into the preparation of teachers to teach literacy and numeracy*. Canberra, ACT: Australian Government Department of Education, Science and Training. Available for download in PDF format at: http://www.dest.gov.au/sectors/school_education/publications_resources/profiles/in_teachers_hands.htm.

Louden, W., Rohl, M., Barrat-Pugh, C., Brown, C., Cairney, T., Elderfield, J., House, H., Meiers, M., Rivaland, J., & Rowe, K.J. (2005b). *In teachers' hands: Effective literacy teaching practices in the early years of schooling*. Canberra, ACT: Australian Government Department of Education, Science and Training. Available for download in PDF format at: http://www.dest.gov.au/sectors/school_education/publications_resources/profiles/in_teachers_hands.htm

Louden, W., Rohl, M., Barrat-Pugh, C., Brown, C., Cairney, T., Elderfield, J., House, H., Meiers, M., Rivaland, J., & Rowe, K.J. (2005c). In teachers' hands: Effective literacy teaching practices in the early years of schooling. *Australian Journal of Language and Literacy, 28*(3), 173-252.

Luke, A.; Elkins, J., Weir, K., Land, R. et al. (2003). *Beyond the middle: A report about literacy and numeracy development of target group students in the middle years of schooling* (Volume 1). Canberra: Commonwealth Department of Education, Science and Training.

Lyon, G.R. (2003). Reading disabilities: Why do some children have difficulty learning to read? What can be done about it? *Perspectives, 29*(2). Available from the International Dyslexia Association's website at: www.interdys.org.

Maclean, R. (2005). Literacies and multiliteracies. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Marks, G.N (2000). The measurement of socioeconomic status and social class in the LSAY project. *Longitudinal Surveys of Australian Youth (LSAY), Technical Paper No. 14*. Camberwell, VIC: Australian Council *for* Educational Research.

Marks, G.N. (2005). Cross-national differences in accounting for social class inequalities in education. *International Sociology, 20*(4), 483-505.

Marks, G.N. (2006). Are between- and within-school differences in student performance largely due to socio-economic background? Evidence from 30 countries. *Educational Research, 48*(1), 21-40.

Masters, G.N. (1994, March). *Setting and measuring performance standards for student achievement*. Paper presented at the conference "Public Investment in School Education: Costs and

Outcomes", sponsored by The Schools Council and The Centre for Economic Policy Research, Australian National University, Canberra, ACT, March 17, 1994.

Masters, G.N. (2004). What makes a good teacher? *Perspectives*, ACER, 14 April 2004.

Masters, G.N., Meiers, M., & Rowe, K.J. (2003). Understanding and monitoring children's growth. *Educare News, 136* (May 2003), 52-53.

Matters, G. (2006). Using data to support learning in schools: Students, teachers, systems. *Australian Education Review No. 49*. Camberwell, VIC: Australian Council *for* Educational Research.

Mayer, R. (2004). Should there be a three-strikes rule against pure Discovery Learning? *American Psychologist*, *59*(1) 14-19.

McGaw, B. (2007). Foreword. In P. Freebody, Literacy education in school: Research perspectives from the past, for the future. *Australian Education Review No. 52* (pp. iii-vi). Camberwell, VIC: Australian Council *for* Educational Research.

McGee, C.; Ward, R.; Gibbons, J. & Harlow, A. (2003). *Transition to Secondary School: A Literature Review*. Wellington: New Zealand Ministry of Education.

McInerney, D.M. & McInerney, V. (2006). *Educational psychology: Constructing learning* (4th ed.). Frenchs Forrest, NSW: Pearson Education Australia.

McRae, D., Ainsworth, G., Cumming, J., Hughes, P., Mackay, T., Price, K., Rowland, M., Warhurst, J., Woods, D., & Zbar, V. (2000). *What Works? Explorations in improving outcomes for Indigenous students*. Canberra: Australian Curriculum Studies Association and National Curriculum Services.

Meiers, M. (2007). Writing to learn, *NSWIT Research Digest*, 2007(1). Available at:: http://www.nswteachers.nsw.edu.au.

Meiers, M., Khoo, S.T, Rowe, K.J., Stephanou, A., Anderson, P., & Nolan, K. (2006). *Growth in literacy and numeracy in the first three years of school.* ACER Research Monograph No. 61. Camberwell, VIC: Australian Council *for* Educational Research [ISBN 0 86431 589 9]. Available at: http://www.acer.edu.au/documents/LP_monograph61.pdf.

Miel, A., & Associates. (1952). *Cooperative procedures in learning:* New York: Bureau of Publications, Teachers College, Columbia University.

Ministry of Education (2007). *Becoming a Teacher in the 21st Century: A review of Initial Teacher Education Policy (September 2007)*. Wellington, NZ: Author.

Monk, D.H. (1992). Education productivity research: An update and assessment of its role in education finance reform. *Education Evaluation and Policy Analysis, 14*, 307-332.

Monk, D.H. (1994). Subject area preparation of secondary mathematics and science teachers, and student achievement. *Economics of Education Review, 13*(2), 125-145.

Moss, P.A. (2007) (Ed.). *Evidence and Decision Making*. The 106th Year Book of the National Society for the Study of Education. Malden, Massachusetts: Blackwell Publishing.

Műijs, D., & Reynolds, D. (2001). *Effective teaching: Evidence and practice.* London: Paul Chapman Publishing.

Mulford, B. (2006). Leadership for school and student learning: What do we know? Keynote address presented at the Australian Centre for Educational Leadership, Fifth International Conference, University of Wollongong, 16 February, 2006.

National Academies (2007). *Study of teacher preparation programs in the United States*. Available at: http://www.nationalacademies.org/teacherprep/.

National Board for Professional Teaching Standards (2005). *Framework of National Board Standards and Certificates*. Available at: www.nbpt.org/standards/stds.

National Middle School Association (1995). *This we Believe: Developmentally responsive middle schools.* Columbus, OH: Author.

National Middle School Association (2000). *How might middle school students be involved in classroom curriculum planning?* Available for download in PDF format at: http://www.nmsa.org/Publications/WebExclusive/Planning/tabid/652/Default.aspx.

National Middle School Association – NMSA (2003a). *This we Believe*: *Successful schools for young adolescents.* Westerville, OH: Author.

National Middle School Association – NMSA (2003b). *Research and resources in support of 'This we Believe'*. Westerville, OH: Author.

Newhouse-Maiden, L., Bahr, N., & Pendergast, D. (2005). Producing resilient middle school students. In D. Pendergast & N. Bahr (Eds.), *Teaching Middle Years: Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

New South Wales Department of Education and Training. (2003). *Quality teaching in NSW Public Schools*. Sydney: NSW Department of Education and Training Professional Support and Curriculum Directorate.

New South Wales Department of Education and Training. (2006). *Our Middle Years Learners – Engaged, Resilient and Successful*. Sydney: NSW Department of Education and Training.

Nolan, C., & Brown, M. (2002). The Fight for Middle School Education in New Zealand. *Middle School Journal*, *33*(4), 34-44.

Northern Territory Council of Government School Organisations (2005). *A Review of Middle Schooling Concepts and Approaches*. Darwin: NT COGSO.

Oberklaid, F. (1988). Australian paediatricians and the new morbidity: A national survey of changing paediatric practice patterns. *Australian Paediatric Journal, 24*, 5-9.

Oberklaid, F. (2004). The new morbidity in education: The paediatrician's role. *Journal of Paediatrics and Child Health, 40*, 250-251.

OECD (2005). *Teachers matter: Attracting, developing and retaining effective teachers*. Paris: Organization for Economic Cooperation and Development.

O'Keeffe, M.J., & McDowell, M. (2004). Bridging the gap between health and education: Words are not enough. *Journal of Paediatrics and Child Health, 40*, 252-257.

Panizzon, D., Barnes, G., & Pegg, J. (2007). *Exceptional Outcomes in Science Education*. Teneriffe, QLD.: Post Pressed.

Paterson, D., Graham, L., & Stevens, R. (2007). *Exceptional Student Welfare Programs*. Teneriffe, QLD.: Post Pressed.

Pegg, J., Lynch, T., & Panizzon, D. (2007). Exceptional Outcomes in Mathematics Education. Teneriffe, Qld: Post Pressed.

Pendergast, D. (2005). The emergence of middle schooling. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Pendergast, D., & Bahr, N. (2005) (Eds.). *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Prais, S.J. (1996). Class size and learning: The Tennessee Experiment – what follows? *Oxford Review of Education, 22*, 399-413.

Prosser, B. (2006). *Reinvigorating the Middle Years: A review of middle schooling*. Paper presented at the Australian Association for Research in Education annual conference, Adelaide, November 27-30 2006.

Purdie, N., & Ellis, L. (2005). *A review of the empirical evidence identifying effective interventions and teaching practices for students with learning difficulties in Years 4, 5 and 6*. A report prepared for the Australian Government Department of Education, Science and Training. Camberwell, VIC: Australian Council for Educational Research. Available for download in PDF format at: http://www.acer.edu.au/research/programs/documents/literaturereview.pdf.

Rafiq, M-i-L., & Woolnough, J. (2005). *Middle Schooling. An exploration of practice in the light of theory*. Paper presented at the Australian Association for Research in Education annual conference, Parramatta, NSW, 27 November- 1 December, 2005.

Ramsey, G. (2000). *Quality matters – revitalising teaching: Critical times, critical choices*. Report of the Review of Teacher Education. Sydney, NSW: Department of Education and Training [ISBN 073107 8842].

Richardson, G. (1998). *Creating Resilient Youth: A Curriculum Framework for Middle School Students and Beyond*. Available for download in PDF format at: http://www.vision.net.au/~globallearning/pdfs/samples/CREATING_R_Y.pdf.

Robinson, G.E. (1990). Synthesis of research on the effects of class size. *Educational Leadership*, April, 80-90.

Robinson, V.M.J., Lloyd, C.A., & Rowe, K.J. (in press). The impact of educational leadership on student outcomes: An analysis of the differential effects of leadership types. *Education Administration Quarterly* (to appear).

Rohl, M., House, H., Louden, W., Milton, M., & Rivalland, J. (2000). *Successful programs and strategies for children with learning difficulties* (MIMEO). Canberra, ACT: Commonwealth of Australia, Department of Education, Training and Youth Affairs.

Rowe, K.J. (1988). Single-sex and mixed-sex classes: The effects of class-type on student achievement, confidence and participation in mathematics. *Australian Journal of Education*, *32*(2), 180-202.

Rowe, K.J. (1991). The influence of reading activity at home on students' attitudes towards reading, classroom attentiveness and reading achievement: An application of structural equation modelling. *British Journal of Educational Psychology, 61*(1), 19-35.

Rowe, K. J. (2000). Assessment, league tables and school effectiveness: Consider the issues and let's get real! *Journal of Educational Enquiry, 1*(1), 72-97.

Rowe, K.J. (2003). *The importance of teacher quality as a key determinant of students' experiences and outcomes of schooling*. Discussion paper prepared for the Interim Committee of the NSW Institute of Teachers available at: http://www.nswteachers.nsw.edu.au/library/Rowe.html.

Rowe, K.J. (2004a). *The importance of teaching: Ensuring better schooling by building teacher capacities that maximize the quality of teaching and learning provision – implications of findings from the international and Australian evidence-based research*. Background paper to invited address presented at the *Making Schools Better Summit Conference*, Melbourne Business School, the University of Melbourne, 26-27 August 2004. Camberwell, VIC: Australian Council *for* Educational Research. Available at: http://www.acer.edu.au/learning_processes/.

Rowe, K.J. (2004b). Educating boys: Research in teacher and school effectiveness, with practical pedagogical implications. *Learning Matters, 9*(2), 3-11.

Rowe, K.J. (2004c). *Summary findings from the Second Stage Trial Study of ratings for students' behaviours on the RBRI 12-Item Teacher Form*. A report on the Class Size Project for the Innovation and Development Unit NSW Department of Education and Training. Camberwell, VIC: Australian Council *for* Educational Research.

Rowe, K.J. (Chair) (2005a). *Teaching reading: Report and recommendations*. Report of the Committee for the National Inquiry into the Teaching of Literacy. Canberra, ACT: Australian Government Department of Education, Science and Training [ISBN 0 642 77577 X]. Available for download in PDF format at: http://www.dest.gov.au/nitl/report.htm.

Rowe, K.J. (Chair) (2005b). *Teaching reading literature review: A review of the evidence-based research literature on approaches to the teaching of literacy, particularly those that are effective in assisting students with reading difficulties*. A report of the Committee for the National Inquiry into the Teaching of Literacy. Canberra, ACT: Australian Government Department of Education, Science and Training [ISBN 0 642 77575 3]. Available for download in PDF format at: http://www.dest.gov.au/nitl/report.htm.

Rowe, K.J. (2005c). Evidence for the kinds of feedback data that support both student and teacher learning. *Research Conference 2005 Proceedings* (pp. 131-146). Camberwell, VIC: Australian Council *for* Educational Research [ISBN 0-86431-684-4]. Available in PDF format from ACER's website at: http://www.acer.edu.au//learning_processes/.

Rowe, K.J. (2006a). Effective teaching practices for students with and without learning difficulties: Issues and implications surrounding key findings and recommendations from the National Inquiry into the Teaching of Literacy (Leading article). *Australian Journal of Learning Disabilities*, *11*(3), 99-115.

Rowe, K.J. (2006b). *Assessment during the early and middle years: Getting the basics right*. Background paper to keynote address presented at the NSW K-4 Early Years of Schooling conference. Telstra Stadium, Sydney Olympic Park, Homebush, 12-13 July 2006. Available at: http://www.acer.edu.au/documents/LP_Rowe-Assessmentintheearlyandmiddleyears July2006.pdf.

Rowe, K.J. (2006c). *Effective teaching practices for students with and without learning difficulties: Constructivism as a legitimate theory of learning AND of teaching?* Background paper to **k**eynote address presented at the NSW DET Office of Schools Portfolio Forum, Wilkins Gallery, Sydney, 14 July 2006. Available for download in PDF format at: http://www.acer.edu.au/documents/LP_Rowe-EffectiveTeachingPracticesJuly2006.pdf**.**

Rowe, K.J. (2007a). Educational effectiveness: The importance of evidence-based teaching practices for the provision of quality teaching and learning standards. In D.M. McInerney, S. Van Etten and M. Dowson (Eds.), *Research on Sociocultural Influences on Motivation and Learning* (*Volume 7, Standards in Education*, pp. 59-92). Greenwich, Conn: Information Age Publishing [ISBN 978-1-59311-78-1].

Rowe, K.J. (2007b). The imperative of evidence-based instructional leadership: Building capacity within professional learning communities via a focus on effective teaching practice. *Centre for Strategic Education Seminar Series, No. 164*, April 2007 [ISBN: 1-920963-45-6]. Available at: http://www.cse.edu.au/seminar_series_latest.php.

Rowe, K.J. (2007c). School and teacher effectiveness: Implications of findings from evidence-based research on teaching and teacher quality. In A. Townsend (Ed.), *International Handbook of School Effectiveness and Improvement* (Part Two, pp. 767-786). Dordrecht: The Netherlands [ISBN-13 978-1-4020-4805-0].

Rowe, K.J. (2007d). *ASSESS and ASSIST: Capacity building for all teachers of students with and without learning difficulties.* Background paper to keynote address presented at the combined SPELD, RSTAQ and LDA Associations Conference. Brisbane Convention and Exhibition Centre, 21-22 September 2007. Available at: http://www.acer.edu.au/learning_processes/.

Rowe,K.J., & Dinham, S.K. (2007, November). *Fact, Fantasy and Rhetoric: The aspirational literature of Middle Schooling*. A consultation presentation to senior administrators, New Zealand Ministry of Education. Wellington, NZ, 12 November 2007.

Rowe, K.J., & Hill, P.W. (1996). Assessing, recording and reporting students' educational progress: The case for 'Subject Profiles'. *Assessment in Education, 3*(3), 309-352.

Rowe, K.J., & Hill, P.W. (1998). Modeling educational effectiveness in classrooms: The use of multilevel structural equations to model students' progress. *Educational Research and Evaluation, 4*(4), 307-347.

Rowe, K.J., Hill, P.W, & Holmes-Smith P. (1995). Methodological issues in educational performance and school effectiveness research: A discussion with worked examples (Leading article). *Australian Journal of Education, 39*(3), 217-248.

Rowe, K.J., & Rowe, K.S. (1992). The relationship between inattentiveness in the classroom and reading achievement (Part B): An Explanatory Study. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31* (2), 357-368.

Rowe, K.J., & Rowe, K.S. (1999). Investigating the relationship between students' *attentive-inattentive* behaviors in the classroom and their literacy progress. *International Journal of Educational Research*, *31*(1-2), 1-138 (Whole Issue).

Rowe, K.J., & Rowe, K.S. (2000). Literacy and behavior: Preventing the shift from what should be an 'educational issue' to what has become a major 'health issue'. *International Journal of Behavioral Medicine, 7* (Supp. 1), 81-82.

Rowe, K.J., & Rowe, K.S. (2002). *What matters most: Evidence-based findings of key factors affecting the educational experiences and outcomes for girls and boys throughout their primary and secondary schooling*. Invited supplementary submission to House of Representatives Standing Committee on Education and Training: *Inquiry Into the Education of Boys* (MIMEO). Melbourne, VIC: Australian Council *for* Educational Research, and Department of General Paediatrics, Royal Children's Hospital. This submission (No. 111.1) is available for download at: http://www.aph.gov.au/house/committee/edt/eofb/index.htm and at: http://www.acer.edu.au/learning_processes/.

Rowe, K.J., & Rowe, K.S. (2006). *BIG issues in Boys' Education: Auditory Processing, literacy and behaviour*. Background paper to keynote address presented at the second NZ *Boys in Education* conference, Massey University, Auckland NZ, 19-21 April 2006. Available at: http://www.acer.edu.au/documents/LP_Rowe-NZBoysinEducationConfPaperApril2000.pdf.

Rowe, K.J., Stephanou, A., & Hoad, K-A. (2007). *A Project to investigate effective 'Third Wave' intervention strategies for students with learning difficulties who are in mainstream schools in Years 4, 5 and 6*. Final report to the Australian Government Department of Education, Science and Training. Camberwell, VIC: Australian Council *for* Educational Research [ISBN 978-0-86431-758-2]. Available at: http://www.acer.edu.au/learning_processes/.

Rowe, K.J., Stephanou, A., & Urbach, D. (2006). *Effective Teaching and Learning Practices Initiative for Students with Learning Difficulties*. Report to the Australian Government Department of Education, Science and Training, the Department of Education and Training Victoria, Catholic Education Office of Victoria, and the Association of Independent Schools of Victoria. Camberwell, VIC: Australian Council *for* Educational Research.

Rowe, K.J., Turner, R., & Lane, K. (2002). Performance feedback to schools of students' Year 12 assessments: The *VCE Data Project*. In A.J. Visscher and R. Coe (Eds.), *School Improvement Through Performance Feedback* (pp. 163-190). Lisse, The Netherlands: Swetz & Zeitlinger.

Rowe, K.S., Pollard, J., & Rowe, K.J. (2003). Auditory processing: Literacy, behaviour and classroom practice. *Speech Pathology Australia: ACQuiring Knowledge in Speech, Language and Hearing, 5*(3), 134-137.

Rowe, K.S., Pollard, J., & Rowe, K.J. (2005). *Literacy, behaviour and auditory processing: Does teacher professional development make a difference*? Background paper to Rue Wright Memorial Award presentation at the 2005 Royal Australasian College of Physicians Scientific Meeting, Wellington, New Zealand, 8-11 May 2005. Available in PDF format at: http://www.acer.edu.au/learning_processes/.

Rowe, K.S., Pollard, J., & Rowe, K.J (2006). *Auditory Processing Assessment Kit: Understanding how children listen and learn*. Melbourne, VIC: Educational Resource Centre, The Royal Children's Hospital [ISBN 0-9775266-0-7]. Further information and an order form for the Kit is available at: www.auditoryprocessingkit.com.au.

Rowe, K.S., & Rowe, K.J. (2005). Early warning (auditory processing). *Literacy Today No. 45*, December 2005, 28-30.

Rowe, K.S., & Rowe, K.J. (2007). *Literary, behaviour and auditory processing. Building fences at the top of the 'cliff' in preference to belated and costly 'ambulance services' at the bottom*. Background paper to keynote address to be presented at the 12th CHERI Conference: *Putting Evidence into Practice to Reach and Teach ADHD*. Westmead Hospital, Sydney NSW, 5-6 September 2007. Available at: http://www.acer.edu.au/learning_processes/.

Sarra, C. (2003). Young and Black and Deadly: Strategies for improving outcomes for indigenous students. *Quality Teaching Series*, number 5, Australian College of Educators, Canberra.

Sawyer, M.G., Arney, F.M., Baghurst, P.A., Clark, J.J., Graetz, B.W., Kosky, R.J., Nurcombe, B., Patton, G.C., Prior, M.R., Raphael, B., Rey, J., Whaites, L.C., & Zubrick, S.R. (2000). *Child and adolescent component of the National Survey of Mental Health and Wellbeing: The mental health of young people in Australia*. Canberra, ACT: Mental Health and Special Programs Branch, Commonwealth Department of Health and Aged Care [ISBN 0 642 44686 5].

Sawyer, W., Baxter, D., & Brock, P. (2007). *Exceptional Outcomes in ESL/Literacy Education*. Teneriffe, QLD.: Post Pressed.

Sawyer, W., Brock, P., & Baxter, D. (2007). *Exceptional outcomes in English Education*. Teneriffe, QLD.: Post Pressed.

Sax, L. (2005). *Why Gender Matters*. New York: Broadway Books.

Scheerens, J., Vermeulen, C.J.A.J., & Pelgrum, W.J. (1989). Generalizability of instructional and school effectiveness indicators across nations. *International Journal of Educational Research, 13*(7), 789-799.

Scott, C. (2007). Teaching as therapy. *Educational Philosophy and Theory Online Early Articles*. Available for download at http://www.blackwell-synergy.com/doi/full/10.1111/j.1469-5812.2007.00364.x

Scott, C., & Dinham, S.K. (2005). Parenting, teaching and self-esteem. *Principal Matters*, No. 64, Spring, pp. 30-32.

Sellar, S., & Cormack, P. (2006). *(Re)conceptualising Middle Years Pedagogy*. Paper presented to Australian Association for Research in Education annual conference, Adelaide, SA, November 27-30.

Silverstein, M., Iverson, L., & Lozano, P. (2002). An English-language clinic-based literacy program is effective for a multilingual population. *Pediatrics, 109*, e76.

Slade, M. (2002). *Listening to the boys: Issues and problems influencing school achievement and retention*. Series: Flinders University Institute of International Education Research Collection, Number 5. Adelaide, SA: Shannon Research Press.

Slade, M., & Trent, F. (2000). What the boys are saying: An examination of the views of boys about declining rates of achievement and retention. *International Education Journal, 1*(2), 201-229.

Slavin, R.E. (1989). Class size and student achievement: Small effects of small classes. *Educational Psychologist, 24*, 99-110.

Slavin, R.E. (1990). Class size and student achievement: Is smaller better? *Contemporary Education, 62*, 6-12.

Slavin, R.E. (1994). Quality, appropriateness, incentive, and time: A model of instructional effectiveness. *International Journal of Educational Research, 21*(2), 141-157.

Slavin, R.E. (1996). *Education for all*. Lisse: Swets & Zeitlinger.

Slavin, R.E. (2005). *Evidence-based reform: Advancing the education of students at risk*. Report prepared for Renewing Our Schools, Securing Our Future: A National Task Force on Public Education (A joint initiative of the Center for American Progress and the Institute for America's Future). Available at: http://www.americanprogress.org/site/.

Smyth, J., & Fasoli, L. (2007). Climbing over the rocks in the road to student engagement and learning in a challenging high school in Australia. *Educational Research*, *49*(3), 273-295.

Taylor, C. (1994). Assessment for measurement of standards: The peril and promise of large-scale assessment reform. *American Educational Research Journal, 31*, 231-262.

Thompson, B. (2002). What future quantitative social science research could look like: Confidence Intervals for Effect Sizes. *Educational Researcher*, April, 2002, 25-32.

Thomson, S., Rowe, K.J., Underwood, C., & Peck, R. (2005). *Numeracy in the early years: Project Good Start*. Final report to the Australian Government Department of Education, Science and Training. Camberwell, VIC: Australian Council *for* Educational Research [ISBN .0 86431 461 2]. Available for download at:

http://www.dest.gov.au/sectors/school_education/publications_resources/profiles/goodstart.htm#publication: and at:

http://www.acer.edu.au/research/projects/goodstart/documents/GoodstartFinalReport.pdf.

Timperley, H., Wilson, A., Barra, H., & Fung, I. (2007a). *Teacher Professional Learning and Development Best Evidence Synthesis Iteration (BES)*. Wellington, NZ: Ministry of Education. Available at: http://educationcounts.edcentre.govt.nz/goto/BES.

Timperley, H., Wilson, A., Barra, H., & Fung, I. (2007b). *Establishing a culturally-responsive pedagogy*. Auckland, NZ: Crown publishers.

UK Middle Schools. (undated). *UK Middle Schools*. Available at: http://www.tafkam.pwp.blueyonder.co.uk/msuk/index.html .

US Department of Education (2002). *No Child Left Behind: A desktop reference*. Washington, DC: Author. Available at: www.ed.gov/offices/OESE/reference.

Vars, G. (2001). Can Curriculum integration survive in an era of high stakes testing? *Middle School Journal*, *3*(2), 7-17.

Visscher, A.J., & Coe, R. (2002) (Eds.). *School improvement through performance feedback*. Lisse, The Netherlands: Swetz & Zeitlinger.

Visscher, A.J., & Coe, R. (2003). School performance feedback systems: Conceptualisation, analysis and reflection. *School Effectiveness and School Improvement, 14*(3), 321-349.

Wallace, J., Venville, G., & Rennie, L. (2005). Integrating the Curriculum. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Ward, L. (2007). *Review of Specialist Classroom Teachers Pilot.* Wellington, NZ: Ministry of Education.

Ward, R. (2000). Transition from middle to secondary school: a New Zealand Study', *International Journal of Educational Research*, 33, 365-374.

Westwood, P.S. (1999). Constructivist approaches to mathematical learning: A note of caution. In D. Barwood, D. Greaves and P. Jeffrey (Eds.), *Teaching numeracy and literacy: Interventions and strategies for 'at risk' students*. Coldstream, Victoria: Australian Resource Educators' Association.

Westwood, P.S. (2004). *Learning and learning difficulties: A handbook for teachers*. Camberwell, VIC: Australian Council *for* Educational Research.

Westwood, P.S. (2006). *Teaching and learning difficulties: Cross-curricular perspectives*. Camberwell, VIC: Australian Council *for* Educational Research.

Wheldall, K. (2006). Positive uses of behaviourism. In D.M McInerney and V. McInerney, *Educational psychology: Constructing learning* (4th ed., pp. 176-179). Frenchs Forrest, NSW: Pearson Education Australia.

Wheldall, K., & Beaman, R. (2000). *An evaluation of MULTILIT: Making up for lost time in literacy*. Canberra, ACT: Commonwealth Department of Education, Training and Youth Affairs.

Willms, J.D. (2007). *Variance within and among classrooms and schools: The case of New Zealand*. Paper prepared for the Iterative Best Evidence Synthesis Program, Ministry of Education, New Zealand.

Wilson, B. (2005). *Unlocking potential*. Paper presented at the 2005 Australian and New Zealand School of Government (AZSOG) conference, The University of Sydney, 29 September 2005.

Wyatt-Smith, C.; Cumming, J., & Elkins, J. (2005). Redesigning assessment. In D. Pendergast and N. Bahr (Eds.), *Teaching Middle Years Rethinking Curriculum, Pedagogy and Assessment*. Cross Nest, NSW: Allen & Unwin.

Wylie, C., & Hodgen, E. (2007). *Competent Learners @ 16: Competency levels and development over time*. Wellington: New Zealand Council for Educational Research.

Yecke, C. (2005). *Mayhem in the Middle: how middle schools have failed America – and how to make them work.* Washington, DC.: Thomas B. Fordham Institute.

Zapf, R. (1959). *Democratic processes in the secondary classroom.* Englewood Cliffs, NJ: Prentice Hall.

Zbar, V., Marshall, G., & Power, P. (2007). *Better Schools, Better Teachers, Better Results: A handbook for improved performance management in your school*. Camberwell, VIC: ACER Press.