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The importance of *Teacher Quality* as a key determinant of students' experiences and outcomes of schooling

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Abstract: Much of the traditional and prevailing dogmas surrounding 'factors' affecting students' experiences and outcomes of schooling throughout their primary and secondary years – especially socio-cultural and socio-economic factors – are now understood to be products of methodological and statistical artefact, and amount to little more than 'religious' adherence to the moribund ideologies of *biological* and *social determinism*. Moreover, post-modernist perspectives espoused by academics promoting the de-construction of *gender-specific pedagogy* and 'middle-class' curricula, are equally unhelpful. Above all, a good deal of this 'discourse' is not supported by findings from evidence-based research. In this paper, key findings are presented highlighting 'real' effects from recent and emerging local and international research on *educational effectiveness*. For example, whereas students' literacy skills, general academic achievements, attitudes, behaviours and experiences of schooling are influenced by their background and intake characteristics, **the magnitude of these effects pale into insignificance compared with class/teacher effects**. That is, the **quality of teaching and learning provision** are by far the most salient influences on students' cognitive, affective, and behavioural outcomes of schooling – regardless of their gender or backgrounds. Indeed, findings from the related local and international evidence-based research indicate that '**what matters most**' is **quality teachers and teaching, supported by strategic teacher professional development!**

Prelude

(Sources: Rowe, 2000b; Slade, 2002):

Ms xxx is a great teacher; she really cares about us. The other teachers at this school are crap!

(Year 6 student)

Our Maths teacher is bloody useless – he just gives out work sheets, then sits down and falls asleep!!

(Year 7 student)

There are too many bad teachers in this school who don't give a shit about us kids

(Year 8 student)

Whatever they do, is what we do. If they're a good teacher and they do better stuff, we do better stuff. If they're a crappy teacher, we do bad stuff

(Year 9 student)

English is boring, but Mr xxx knows his stuff and gets excited about it. So we don't muck-around; we work hard and get a lot out of it

(Year 10 student)

Next year in Year 12, I want to get a good ENTER score so I'm doing those subjects that have the best teachers. The trouble is, there's not enough good teachers. Good teachers make all the difference!

(Year 11 student)

Educational effectiveness and teacher quality

The international context

The provision of schooling is one of the most massive and ubiquitous undertakings of the modern state. Schools account for a substantial proportion of public and private expenditure and are universally regarded as vital instruments of social and economic policy aimed at promoting individual fulfilment, social progress and national prosperity. Moreover, since schooling generates a substantial quantity of paid employment for teachers and administrators, it is not surprising that there has long been an interest in knowing how *effective* the provision of school education is and how it can be improved.¹ What is surprising is the shakiness of our knowledge about *educational effectiveness* in terms of both experiences and outcomes of schooling for students, teachers, parents and the wider community. Even more intriguing is that the journey² taken by researchers since the 1960s in search of answers appears, 40 years later, to have only begun casting light on what **really matters** in affecting students' experiences and outcomes of schooling, namely, **teacher quality**.

Disappointingly, this 'light' was **not** evident in the bulk of keynote addresses and papers presented at the 2003 conference of the *International Congress for School Effectiveness and Improvement* (ICSEI) held at the

¹See, for example: Coleman et al. (1966); DES (1984); Goodlad (1982, 1983); Jencks et al. (1972); Mortimore (1992); OECD (1983); Reynolds, Hopkins & Stoll (1993); Rowe (2001); Rutter et al. (1979).
²For sustained accounts of this journey see: Bosker & Scheerens (1994); Creemers & Scheerens (1994); Mortimore (1991, 1992); Reynolds & Cuttance (1992); Reynolds et al. (1994); Scheerens (1992, 1993); Scheerens & Bosker (1997).

Sydney Convention Centre (January 5–8, 2003). With very few exceptions (for example, Watts, 2003), presentations focusing on the importance of *teacher quality* were conspicuous by their absence. Rather, the conference was characterised by ‘offerings’ advocating *structural* changes for systemic, standards-based reform (including curriculum *deconstruction* and *reconstruction*) that have a long and not-so-distinguished history of rarely ‘penetrating the classroom door’.

Consistent with the adoption of corporate management models in educational governance and the prevailing climate of ‘outcomes-driven’ economic rationalism in which such models operate, policy activity related to issues of *accountability*, *assessment monitoring*, *performance indicators*, *quality assurance* and *school effectiveness* is widespread. However, economic and industrial issues surrounding *school effectiveness* and *teacher quality* are especially sensitive ones at the present time given the level of consensus regarding the importance of school education as an essential element of both micro- and macro economic reform, and in meeting the constantly changing demands of the modern workplace (OECD, 1986, 1989, 1993). Proclamations by the international media magnate Rupert Murdoch at the National Press Club on October 12, 2001, serve to underscore this importance. On this occasion, Murdoch asserted that if Australia continues with its reluctance to invest in the quality of its primary, secondary and tertiary educational infrastructure, and especially in *teacher quality*, ‘...Australia will end up even further behind the international economic “8-ball” than it is at present, such that Paul Keating’s “banana republic” prognostications will become a reality’.

Despite the difficulties entailed in defining an *effective school* or a *quality teacher* (see Cheng, 1996; Mortimore, 1991; Sammons, 1996),³ the work on school effectiveness to date has primarily focused on the search for ways to measure the *quality* of a school – defined almost exclusively in terms of students’ academic achievement progress in Literacy and Numeracy. Although the term *quality* is likewise problematic (see Istance & Lowe, 1991), the ‘...measurement of the quality of schooling is of critical importance at a time when so much school reform in so many parts of the world is being undertaken’ (Mortimore, 1991, p. 214). Nonetheless, for the past 25 years, concern about the *quality* of school education has become a high priority policy issue in all OECD countries where attention has focused on ways of assessing the *quality* of schools, of identifying factors associated with *effective schooling*, and on using such knowledge to achieve further improvements in quality.⁴

It has been noted frequently that school effectiveness research grew out of studies of *educational effectiveness* focusing on production functions (Fraser, Walberg, Welch & Hattie, 1987; Hanushek, 1979, 1985, 1986; Monk, 1992), and more especially out of the initial sociologically oriented input-output studies by Coleman et al. (1966), and by Jencks et al. (1972). These researchers were interested primarily in issues of social ‘equity’ and the influence of the school relative to that of ‘sociologically-determined’ background characteristics of students. Their findings were interpreted as casting serious doubts on the capacity of schools to make a difference relative to the influence of the socio-cultural and economic capital of home background. Indeed, for the past 40 years, the major theories (or models) of learning processes (for example, Bennett, 1978; Bloom, 1976; Carroll, 1963), and the ‘process-product’ research generated by them (Brophy, 1986; Fraser et al., 1987), have primarily focused on *school learning*, or ‘...holistic conceptions of student learning in classroom settings’ (Boekaerts, 1986, p. 129). Such has been the case despite consistent findings indicating that school factors including, financial and material resources, class size, teachers’ qualifications, classroom organisation and teaching methods, account for less than 15 per cent of the variance in measures of student achievement.⁵

Rather, during these 40 years, influential studies such as those reported by Coleman et al. (1966) and Jencks et al. (1972) in the USA, and Bernstein (1971), Peaker (1967) and Plowden (1967) in Britain, ‘...provided evidence that schools and teachers are not effective in enhancing achievement’ (Hattie, 1992, p. 9). Indeed, findings from these early studies suggested that school effects have little impact on students’ learning outcomes. For example, after estimating that only nine per cent of the variance in student achievement measures was due to school effects, Coleman et al. (1966) came to the somewhat depressing conclusion that ‘...schools bring little influence to bear on a child’s achievement that is independent of his background and general social context’ (p. 325). The consensus of findings from these studies was that ethnic and family socio-economic (SES) background factors constituted the dominant determinants of students’ educational outcomes. Reynolds, Hargreaves and Blackstone (1980, p. 208) summarised this consensus in the following terms: ‘...variations in what children learn at school depends largely upon variations in what they bring and not on variations in what schools offer them’. In what has become a familiar pattern, the conclusions arrived at by this early research were consistent with prevailing social and political opinion. However, a growing number of researchers have since

³Mortimore (1991, p. 216) suggests the following ‘outcomes-oriented’ definition: ‘An effective school is one in which pupils progress further than might be expected from consideration of its intake.’

⁴See Ainley, Fleming & Rowe (2002); Banks (1992); Chapman et al. (1991); Coleman & Collinge (1991); Creemers & Scheerens (1989); Cuttance (1992); Hill et al. (1996); Forster, Masters & Rowe (2001); McGaw, Piper, Banks & Evans (1992); Reynolds & Cuttance (1992); Rowe (2001a); Rowe, Holmes-Smith & Hill (1993).

⁵For example: Bosker et al. (1994); Bosker & Witziers (1995); Hanushek (1979, 1986); Glass (1992); Glass et al. (1982); Hattie (1992); Monk (1992).

provided contrary evidence to the claims that relative to home background influences the effects of schooling are negligible.⁶ Many of these researchers have been critical of findings from studies such as Coleman et al. and Jenks et al. because the inherent hierarchical nature of the data had not been taken into account.

Early studies of school effectiveness such as those by Brookover, Beady, Flood, Schweitzer and Wisenbaker (1979); Edmonds (1979a) and by Rutter, Maughan, Mortimer, Ouston and Smith (1979), were conceived largely as a reaction to the Coleman and Jencks conclusions. The Brookover, Edmonds and Rutter studies adopted a different starting point and focused on identifying contextual features of schools in which students were performing better than their counterparts in comparable schools, after adjusting for the effects of intake characteristics. Given this starting point, the positive conclusions from such studies and the enthusiasm with which they were promoted was not unexpected. The message from this work is that effective schools are characterised by an 'ethos' or 'culture' oriented towards learning, expressed in terms of high standards and expectations of students, an emphasis on basic skills, a high level of involvement in decision-making and professionalism among teachers, cohesiveness, clear policies on matters such as homework and student behaviour, and so on. Moreover, 'effective schools' were also supposed to be characterised by outstanding educational leadership, particularly as exercised by the principal and directed at establishing agreed goals, increasing competence and involvement of staff and at clarifying roles and expectations. Edmonds (1979b) was the first to summarise these features into what has become known as the 'five factor model' of school effectiveness, namely:

1. purposeful educational leadership;
2. challenging teaching and high expectations of students;
3. involvement of and consistency among teachers;
4. a positive and orderly climate; and
5. frequent evaluation of student progress.

This 'five factor model' continues to form the basis of what might be termed the *optimistic account* of school effectiveness research – an account that presents a positive picture of the role and efficacy of *structural* or *contextual* school influences. In addition to the well known critiques of the 'five-factor model' (for example, Ralph & Fenessey, 1983; Scheerens & Creemers, 1989), there are several problems with the *optimistic account*, not the least of which is that it was built upon an extremely fragile research base.

First, the little empirical evidence available was not extensive, with most of the knowledge base being derived from small-scale case studies; but mostly from scholarly reviews and comment (for example, Good & Weinstein, 1986; Purkey & Smith, 1993; Levine & Lezotte, 1990; Wilson & Corcoran, 1988). For example, the 1979 study by Rutter et al. was based on observations made in just 12 inner London schools. Banks (1992, p. 19) noted that '...the relevant (research) literature on effective schools is not extensive, with scholarly comment and critique constituting the major proportion'.

Second, there have been relatively few large-scale studies capable of providing valid generalisations, and fewer still that have collected longitudinal data that are essential for the estimation of specific effects of schools over and above that which students bring with them (see Raudenbush, 1989). Nuttall et al. (1989, p. 775) suggest that it is necessary to be cautious in interpreting '...any study of school effectiveness that relies on measures of outcome in just a single year, or stability over time'. While the advice is apt, the logistical problems in mounting and maintaining such studies entail severe practical constraints, resulting in a virtual absence of studies conducted over long periods of time.

Third, the methods typically used to analyse the derived data have not allowed for the modelling of complex interrelationships between inputs, processes and outcomes, including indirect effects and reciprocal effects; nor have they taken into account the inherent nested structure of schooling and the organisation of students into classes taught by particular teachers.⁷ In the preface to their edited collection of related research articles, Raudenbush and Willms (1991, p. xi) observed:

An irony in the history of quantitative studies of schooling has been the failure of researchers' analytic models to reflect adequately the social organization of life in classrooms and schools. The experiences that children share within school settings and the effects of these experiences on their development might be seen as the basic material of educational research; yet until recently, few studies have explicitly taken account of the effects of particular classrooms and schools in which students and teachers share membership.

(1996); Scheerens (1992, 1997); Scheerens & Bosker (1997); Stringfield (1994); Teddlie (1994); Tymms, Merrell & Henderson (1997).

⁶There is now a large literature attesting to the effects of schooling on student learning outcomes. Among the most notable include: Bosker et al. (1994); Bosker & Witziers (1995); Creemers (1994a,b, 1997); Creemers & Reezigt (1996); Creemers & Scheerens (1994); Goldstein (1980, 1987, 1997); Goldstein & Sammons (1997); Hattie (1992); Hill (1997); Hill et al. (1993, 1996); Hill & Rowe (1996); Lee & Bryk (1989); Mortimore (1995); Raudenbush & Willms (1991); Reynolds & Cuttance (1992); Reynolds et al. (1994); Rowe (1991a,b, 1995, 1997a); Rowe & Hill (1994, 1997b); Sammons

⁷See: Bosker & Scheerens (1989, 1994); Hill & Rowe (1996, 1998); Rowe & Hill (1998); Rowe, Hill & Holmes-Smith (1995); Rowe & Rowe (1999); Scheerens (1992); Scheerens & Bosker (1997).

⁸For structural equation modelling, see: Arbuckle & Wothke (1999); Bentler (1980, 1989); Jöreskog & Sörbom (1989, 2002); Kaplan (2000); McDonald (1978); Muthén (1984); Rowe (1997a, 2001a, 2002a).

These are problems that only relatively recent methodological advances have addressed. Two developments are especially worthy of comment. The first is the development of structural equation modelling techniques that enable the simultaneous estimation of interdependent effects among variables within a framework that takes into account measurement error, as well as structural prediction residual.⁸ The second is the development of multilevel analysis techniques that can account for the inherent hierarchical structure of the data, and enable estimation of the influence of variables operating at different levels of analysis.⁹

Fourth, the criterion measures used in school effectiveness studies have typically been limited to scores on standardised tests of cognitive achievement (or on public examinations), with scant attention being paid (if at all) to other highly valued outcomes of schooling that include attitudinal, social and behavioural competencies. Whereas the use of scores on achievement tests for the measurement and identification of *educational effectiveness* is typically justified on the grounds of maximising reliability, this has often been at the expense of validity. That is, while such tests have moderate correlations with measures of student intake characteristics and background factors, they are questionable in terms of their validity as measures of the curriculum taught in classrooms within schools. Moreover, there has long been criticism of the utility of such tests as measures of either learning or competence.¹⁰ Such criticism has gained credence in the areas of standards monitoring and performance assessment, where new approaches to obtaining more curriculum-specific and “authentic” (Wiggins, 1989) measures of assessment are being tried,¹¹ but it is a criticism that has been largely ignored in almost all studies of school effectiveness.

These methodological criticisms of the early school effectiveness research have provided the impetus for a relatively small number of ‘second generation’ studies and to an even smaller number of what Scheerens (1992, 1995), and Scheerens and Bosker (1997) refer to as ‘state-of-the-art’ studies.¹² These more recent 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 a comprehensive meta-analytic study by Bosker and Witziers (1995) and by the work of Marks (2000). Moreover, they are of an order of magnitude close to that estimated by Coleman and Jencks (that is ~ nine per cent of the variance).¹³ 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. This, in turn, has prompted a renewed focus on *teacher quality* and *instructional effectiveness*, and to some redefinition of the fundamental questions underpinning educational effectiveness research (see: Creemers, 1992; Slavin, 1994, 1996; Rowe, 2003a; Rowe & Rowe, 2003).

The small number of ‘state of the art’ educational effectiveness studies undoubtedly reflects the fact that the technical and logistical demands of such studies are immense. In the Australian context, the *Victorian Quality Schools Project* (Hill, Holmes-Smith & Rowe, 1993; Hill & Rowe, 1996, 1998; Hill et al., 1996; Rowe & Hill, 1998; Rowe & Rowe, 1999) was the first major empirical study of school and teacher effectiveness, although there has been an important national study by McGaw and colleagues into parent and teacher perceptions of what makes an effective school (McGaw, Piper, Banks & Evans, 1992) – mentioned in more detail later.

Nonetheless, the little relevant research that has been done during the past 25 years has tended to suggest that administrative and social organisational features of schools are important factors influencing both teachers and students.¹⁴ This work, focused mostly on student achievement outcomes, has stemmed mainly from two sources: research on effective schools,¹⁵ and the relative effectiveness of public and private schools.¹⁶ In fact, organisational factors were seen as important determinants of effective schools,¹⁷ with frequently cited features including the school’s organisational culture, ethos or climate (Grant, 1988; Lightfoot, 1983; Rutter *et al.*, 1979).

Even where empirical work has been done, difficulties in demonstrating direct links between school organisation and student outcomes continue to be commonplace. The reasons for these difficulties are

⁸See: Aitkin & Longford (1986); Bock (1989); Bryk & Raudenbush (1988, 1992); Goldstein (1986, 1987, 1995); Hox (1994); Kreft & de Leeuw (1998); McDonald (1994); Rasbash et al. (1996, 2002); Raudenbush & Willms (1991); Rowe (1999a, 2003b).

⁹For example, see: Darling-Hammond (1994); Frederiksen (1984); Lacey & Lawton (1981); Linn (1986); Newman & Archbald (1990, 1992); Rowe & Hill (1996); Wigdor & Garner (1982).

¹⁰See, for example: Goldstein & Lewis (1996); Lesh & Lamon (1992); Masters & Forster (1997a,b); Moss (1994); Murphy (1995); Nisbet (1993); O’Connor (1992); Resnick & Resnick (1992); Rowe & Hill (1996); Shavelson (1994); Taylor (1994).

¹¹That is: Bosker, Kremers & Lugthart (1990); Brandsma (1993); Mortimore et al. (1988); Hill et al. (1996); Hill & Rowe (1996, 1998); Rowe (1991, 1997); Rowe & Hill (1998); Rowe & Rowe (1992a,b, 1999); Teddlie & Stringfield (1993).

¹²See, for example: the *ILEA Junior School Project* reported by Mortimore et al. (1985, 1988, 1989); the re-analysis of IEA data reported by Scheerens, Vermeulen & Pelgrum (1989); findings from the *Victorian Quality Schools Project* (Hill et al., 1993, 1996; Hill & Rowe, 1996, 1998; Rowe & Hill, 1998; Rowe & Rowe, 1999); and key results from the *VCE Data Project* reported by Rowe, Turner & Lane (1999, 2002).

¹³See: Ainley, Reed & Miller (1986); Hill et al. (1993, 1996); Lee, Dedrick & Smith (1991); Rosenholtz (1989); Rowe (1991).

¹⁴For comprehensive reviews at this time, see: Banks (1992); Bosker, Creemers & Scheerens (1994); Creemers & Scheerens (1989); McGaw et al. (1992); Raudenbush & Willms (1991); Reynolds & Cuttance (1992); Rowe, Hill, and Holmes-Smith (1994); Scheerens (1993).

¹⁵For example, see: Anderson (1990, 1992); Graetz (1990); Lee & Bryk (1989); Steedman (1983); Williams & Carpenter (1990, 1991).

¹⁶See: Chubb (1988); Chubb & Moe (1990); McNeil (1986); Metz (1986); Newman, Rutter & Smith (1989).

¹⁷See: Bidwell & Kasarda (1980); Ecob et al. (1982); Goldstein (1980); Rowe & Hill (1998); Mortimore et al. (1988a,b); Ralph & Fenessey (1983); Rowe (1989); Rowe & Hill (1994).

both substantive and methodological.¹⁸ The substantive difficulties arise from a general failure to realise that it is more appropriate to conceptualise the link between schools and students as *indirect* and mediated by teachers (Lee, Dedrick & Smith, 1991). According to this view, school organisation factors influence how teachers conduct their work and how they teach. In turn, teachers' practices influence students' learning. While strong relationships have been demonstrated between student achievement and teachers' levels of "efficacy" (Ashton & Webb, 1986) and 'commitment' (Rosenholtz, 1985), the findings from such studies are limited because their analyses did not take hierarchical relationships into account.

The Australian context

In March 1991, focus on school and teacher effectiveness issues were given particular impetus by the Australian government's provision of \$10.5 million for the three-year *Good Schools Strategy* and its related projects, namely, the *National Schools Project* (NSP) and the *National Project on the Quality of Teaching and Learning* – NPQTL (Schools Council, 1991). Nevertheless, Hill (1992, p. 403) missed the crucial point about *quality teaching and learning* by noting: 'The NSP is a major action research activity of the NPQTL to investigate how changes to **work organisation** can lead to improved student learning outcomes'. Furthermore, following guidelines for school self-management linked to quality outcomes, as outlined by Caldwell (1993) and Caldwell & Spinks (1988, 1992), the incoming Victorian government at the time launched its *Schools of the Future* policy initiative (Directorate of School Education, 1993) that was designed to:

... maximise the proportion of the educational dollar which is deployed at the school level and give schools the capacity to match resources to the educational needs of students. Its major features include the equitable allocation of resources to schools, ... increased accountability for outcomes, and a strengthening of the role of the principal as an educational leader (Caldwell, 1993, p. 1).

Similarly, the expressed aim of the Quality Assurance Directorate of the New South Wales Department of School Education at that time was to '...bring together two distinct aspects of work in education systems: accountability and school development' (Cuttance, 1992, p. 1). In this context, Rowe and Sykes (1989, p. 129) had noted earlier that: 'One of the effects of such proposals has been to signal major shifts in government policy intention to bring the delivery of "professional" educational services into "public sector" accounting, underscored by a concern to ensure that such services represent "value for money"'.

However, the focus on *teacher quality* via the NPQTL remained as a mere artefact of political and bureaucratic rhetoric.

Whereas this activity confirmed an increasing national approach to educational governance and accountability by the Australian Federal Government, first signalled in the paper entitled *Strengthening Australia's Schools* (Dawkins, 1988), the research base and related evidence to support these major policy initiatives was, and continues to be, extremely limited. On the basis of an intensive study of models of school effectiveness up to that time, Banks (1992, p. 199) observed:

Research on effective schools is being used to shape major policy-making initiatives in Australia and overseas, even though what makes some schools more effective than others remains an open question. Because clear and unequivocal messages to educators and policy makers are yet to emerge from the research, unquestioning acceptance of the current findings should be a cause for concern.

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