

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 Literacy¹

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Abstract

Much of what is commonly claimed as 'effective teaching practice' and implemented during the early and middle years in Australian schools, for either mainstream students or for those experiencing learning difficulties, is not grounded in findings from evidence-based research. Issues surrounding 'effective teaching practice' came into particularly sharp focus during the 2004-2005 National Inquiry into the Teaching of Literacy (NITL). Following a brief outline of the NITL context and controversies surrounding 'effective teaching practice', this paper focuses on teaching strategies that are demonstrably effective in maximising the achievement progress of students during the early and middle years of schooling. It is argued 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 an evidence-based repertoire of pedagogical skills that are effective in meeting the developmental and learning needs of *all* students.

Context of the National Inquiry into the Teaching of Literacy

On 30 November 2004, the then-Australian Government Minister for Education, Science and Training (Dr Brendan Nelson) announced the establishment of a National Inquiry into the Teaching of Literacy (NITL).³ In brief, the aims of the Inquiry were to inquire into:

- the teaching of reading in Australian schools;
- the assessment of reading proficiency including identification of students with reading difficulties; and
- teacher training and the extent to which it prepares teachers adequately for reading instruction.

The stated objectives of the Inquiry were fivefold, but the first three will suffice for present purposes, namely:

1. Review and analyse recent national and international research about literacy teaching approaches, particularly approaches that are shown to be effective in assisting students with reading difficulties.
2. Identify the extent to which prospective teachers are provided with reading teaching approaches and skills that are effective in the classroom, and have the opportunities to develop and practice the skills required to implement effective classroom reading

programs. Training in both phonics and whole-language approaches to reading will be examined.

3. Identify the ways in which research evidence on literacy teaching and policies in Australian schools can best inform classroom teaching practice and support teacher professional learning.⁴

The specification of these objectives had been influenced by the contents of an open letter from 26 Australian academics and reading researchers addressed to the Minister in March 2004 (see Anderson et al., 2004).⁵ The letter, titled 'Reading Instruction in Australian Schools', expressed concerns about the way in which reading is typically taught in Australian schools, as follows:

As researchers, psychologists, linguists and educators who have studied the processes underlying the development of reading, and who are familiar with the scientific research literature relating to the acquisition of reading, we are writing to you to express our concerns with the way in which reading is typically being taught in Australian schools. We would like particularly to draw your attention to the continuing discrepancy between the model of reading development that forms the basis for most of our current school curricula and teaching methods, and the model of reading development that is emerging as a result of the research into reading that has been undertaken over

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the past twenty to thirty years. ... Given the emphasis that is now being placed on evidence-based policy, we ask that consideration be given to setting up an independent review to examine the research evidence relating to the teaching of reading, and the extent to which current practices are based on this evidence.

The letter asserted that the predominant whole-language approach to the teaching of reading is both ineffective and inappropriate.⁶ Moreover, it was claimed that because it is not based on findings from the available evidence-based research about how children best learn to read, poor reading skills are in most cases due to ineffective teaching practices endemic to whole-language approaches during the crucial early years of mainstream 'first wave' classroom teaching. Further, the letter claimed that the initial gains made by students exposed to 'second wave' intervention programs are not sustained unless such students are located in classrooms with teachers who are skilled in providing further support in explicit, systematic phonics instruction for those students.⁷ Effective initial teaching of reading, it was argued, would substantially reduce the need for costly remedial programs for under-achieving students. The same applies to 'third wave' intervention strategies for under-achieving students during the middle years of schooling.⁸ The contents of this letter have since been supplemented by a collection of articles by many of its authors in a special issue of the *Australian Journal of Learning Disabilities*, edited by Wheldall and de Lemos (2005).

A key issue faced by the NITL Committee throughout the duration of the Inquiry focused on prevailing views of 'effective' teaching practice for literacy, and for beginning reading in particular. At the centre of these views was the moribund phonics vs. whole-language debate (long known as the 'reading wars'). Elements of the above-mentioned dichotomous debate were exemplified in most submissions to the Inquiry, as well as subsequently (e.g., Ewing, 2006). In particular, critical reactions have focussed on the first two recommendations of the NITL Committee's report (Rowe, 2005a, p. 38):

1. The Committee recommends that teachers be equipped with teaching strategies based on findings from rigorous, evidence-based research that are shown to be effective in enhancing the literacy development of all children.
2. The Committee recommends that teachers provide systematic, direct and explicit phonics instruction so that children master the essential alphabetic code-breaking skills required for foundational reading proficiency. Equally, that teachers provide an integrated approach to reading that supports the development of oral language, vocabulary, grammar, reading fluency, comprehension and the

literacies of new technologies.

In the case of the Ewing (2006a) publication, it is clear that the chapter contributors have: (a) neither read the contents of the major NITL reports (i.e., Rowe, 2005a, 2005b), and (b) have little or no familiarity with the related evidence-based research. For example, despite the fact that the main NITL report emphasised that "This dichotomy is false" (Rowe, 2005a, p. 11), offerings by Anderson (2006), Cambourne (2006) and Ewing (2006b) vacuously 'defend' ideological commitments to constructivist, whole-language approaches to pedagogy – all in the absence of reference to findings from the large body of available evidence-based research.

If these views of 'effective' teaching practice are representative of those held more generally by teacher educators and practicing classroom teachers, augurs not well for both teacher professionalism and for the students they teach. In the absence of strong support from evidence-based research findings, pedagogical strategies for literacy (and any other area of the curriculum) amount to little more than misdirected rhetoric of their gatherers and purveyors. At this point, a brief outline of contemporary understandings of 'effective' teaching practice is helpful.⁹

Contemporary understandings of 'effective' teaching practice

Teaching strategies have long generated debate and ideological controversy, especially as to 'best practice'. Two clear orientations have provided the basis for this controversy: direct (or explicit) instruction, and student-centred constructivist approaches. Whereas neither of these teaching methods alone (or their variants) is appropriate for engendering all types of learning (Purdie & Ellis, 2005; Westwood, 1999, 2006), the widespread and mostly unquestioning adoption of constructivist orientations towards teaching in most areas of the curriculum throughout Australian schools and higher education institutions is problematic.

A key reason for this is that despite strong supporting evidence for the superior effects of teacher-directed approaches on student learning (i.e., direct instruction)¹⁰, the philosophy of constructivism (a cognitive theory of learning rather than of teaching) has enduring influences on the content of teacher education courses (Louden et al., 2005a; Rohl & Greaves, 2004; Rowe, 2005a, 2005b), supported by prescribed literature such as: Cambourne (2002); McInerney and McInerney (1998, 2002, 2006), as well as on the content of inservice teacher professional development programs. Moreover, constructivist approaches to teaching prevail as predominant methods throughout school systems in many western countries, and

are given high prominence in the content of curriculum standards (or essential learning) documents currently provided by all Australian State and Territory government departments of education and training.

However, there is a strong body of evidence that exclusive emphasis on constructivist approaches to teaching are neither initially nor subsequently in the best interests of any group of students, and especially for those experiencing learning difficulties (Center, 2005; Farkota, 2003a, 2005; Moats, 2000; Swanson, 1999; Swanson & Deshler, 2003; Westwood, 1999, 2000, 2001, 2003a, 2003b, 2003c, 2004, 2006). For children from disadvantaged backgrounds who often do not have rich phonological knowledge and phonemic awareness upon which to base new learning, being taught under constructivist modes has the effect of compounding their disadvantage once they begin school (Munro, 1997, 1998, 1999, 2000a, 2000b).

This is particularly the case for children from non-English speaking backgrounds including indigenous children, where English may be their second or third language. Indeed, Farkota (2005) argues that many cases of learning difficulty and related under-achievement can be attributed to inappropriate or insufficient teaching, rather than to deficiencies intrinsic to students such as cognitive, affective and behavioural difficulties, as well as their socio-cultural backgrounds and contexts, with constructivist approaches being major protagonists. A brief explication of constructivist approaches to teaching is warranted here.

The rationale for constructivism as a teaching method

Teaching methods that are described as 'student-centred' tend to be aligned with constructivism – an established and widely espoused theory of knowing and learning¹¹ – which can be traced to advocates of active and experimental methods reflected in the work of educational theorists such as Ausubel (1968), Bruner (1961, 1966), Dewey (1933), Piaget (1954), Rousseau (1762, 1979) and Vygotsky (1978). More recently, advocates of constructivism have coined various labels for constructivist approaches to both learning and teaching, including 'anchored instruction', 'situated learning', 'discovery learning', 'task-based learning' and 'scaffolding' – each of which share many common features. Further, as noted by Westwood (2006): "problem-based learning" (PBL) – also known as 'issues-based learning' – has gained popularity in recent years as a method for use in higher education, particularly in the medical, therapeutic and other professional fields where the 'problem' is often in the form of a 'case study'" (p. 36). PBL encompasses many of the 'student-centred'

approaches to teaching and learning for which the underlying rationale is essentially twofold:

- students should be intrinsically motivated and actively involved in the learning process; and
- subject matter studied should, as far as possible, be 'authentic', 'interesting' and 'relevant'.

The implicit assumptions underlying such rationale are that 'intrinsically motivated' learners, independent of explicit instruction provision, have acquired sufficient prior knowledge and skills (particularly basic literacy, numeracy and study skills) to engage effectively and productively for generating new learning in a given subject matter domain. The compelling evidence that this is not the case for medical students in the acquisition of differential diagnostic skills, for example, applies equally for children learning to read, write, spell and undertake mathematical computation. In the case of medical students, the necessity of explicit instruction by subject matter experts for efficient knowledge acquisition in the basic sciences of anatomy, physiology, biochemistry and pathology is foundational. Similarly, for children learning to read, write, spell and compute, explicit instruction in the alphabetic principle of letter-sound relationships (especially in English) and the mathematical principles underlying computation in number operations, space and measurement, are also foundational to literacy and numeracy learning.

Despite strong evidence for the limitations of exclusive constructivist methods of teaching, they are widely endorsed and practiced. For example, in their opening chapter titled, 'Effective teaching and learning–constructivist perspectives', McInerney and McInerney (2006, p. 3) write:

These approaches explicitly emphasise the intrapersonal dimensions of learning and, in particular, posit that knowledge is not transmitted directly from one knower to another, but is actively built up by the learner through child-determined exploration and discovery rather than direct teaching.

These claims are extraordinary on at least two counts: (a) they are not supported by findings from a large body of evidence-based research,¹² and (b) give rise to deleterious effects of educators absolving their professional responsibility to be instructionally effective in teaching foundational knowledge and skills (e.g., Creemers, 1994; Hattie, 2003, 2005; Muijs & Reynolds, 2001; Rowe, 2005b, 2006b; Slavin, 1994).

Features of constructivism and their limitations for teaching practice

The key element in constructivism is that the learner is an active contributor to the learning process, and that

teaching methods should focus on what the student can bring to the learning situation as much as on what is received from the environment. This approach is expressed by Ausubel's (1968) contention that "the most important single factor influencing learning is what the learner already knows" (p. 332). Learning that builds effectively on the learner's current knowledge is said to be within the student's zone of proximal development (ZPD). The ZPD establishes what the learner already knows and can do with minimal assistance by a teacher or peer – following which the individual is expected to undertake learning tasks independently.

Hence, the role of the teacher is to be a facilitator of learning (rather than a director or an orchestrator), and to provide opportunities for individual learners to acquire knowledge and construct meaning through their own activities, and through discussion, reflection and the sharing of ideas with other learners with minimal corrective intervention (Cambourne, 2002; Daniels, 2001; McInerney & McInerney, 1998, 2002, 2006; Selley, 1999; Von Glaserfeld, 1995). Sasson (2001, p. 189) refers to constructivism as "...a mixture of Piagetian stage theory with postmodernist ideology" that is devoid of evidence-based justification for its adoption as an effective method of teaching. Similarly, in highlighting the inappropriateness of constructivism as an operational theory of teaching, Wilson (2005, pp. 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 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 Australian universities currently providing pre-service teacher education base their programs on constructivist views of both learning and teaching.¹³ Westwood (1999), for example, highlights the results of a small South Australian study which found that most teachers (79 per cent) had been strongly encouraged to use a constructivist approach in their initial teacher education courses and during inservice 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, p. 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 commenting on what is arguably the most comprehensive report on initial teacher education and professional development compiled to date, Teachers Matter (OECD, 2005b), Caldwell (2006, p. 112) observes:

The focus of training programs for teachers has been overwhelmingly on initial teacher education, which includes training on pedagogy, the subject matter that the pre-service teacher aims to teach and, often, subject-specific pedagogy. This report suggest that pre-service education needs to be more focused on the things teachers will be expected to know and do once in the classroom.

This is excellent advice, provided that teacher educators and inservice professional development providers base their curricular for teaching practice on findings from the extensive body of research evidence that clearly indicates what works. The fact that this is most often not the case is alarming (Rowe, 2005a, 2005b, 2006b). For example, in highlighting the evidence indicating that failure in student learning is strongly linked to deficiencies in teaching practice, Wheldall (2006, p. 177) notes:

[A] necessary condition for learning to take place is effective instruction, but we hardly ever seem to

employ it in schools! This is particularly evident in the teaching of reading. In spite of the failure of so-called whole language in teaching reading [a constructivist orientation], this is the approach that most teachers identify with and which dominates practice in our schools. ... This frustration with ineffective instruction in reading and related skills led to our development of MULILIT [Wheldall & Beaman, 2000]. By employing a rigorous, intensive, systematic, skills-based program of instruction, we have demonstrated that low progress readers can make extraordinary progress.

These observations correspond with the purpose of the present paper, namely to highlight local and international evidence-based research findings that identify 'best' teaching practice for student learning, especially for those who experience learning difficulties. Compared with constructivist pedagogies, the key elements of Direct Instruction and the research evidence that support its utility are worth noting here – albeit briefly.¹⁴

Key features of Direct Instruction and its research base

Direct Instruction (DI) – sometimes referred to as explicit instruction – "is a systematic method for presenting learning material in small steps, pausing to check for student understanding, and eliciting active and successful participation from all students" (Rosenshine, 1986, p. 60). DI modes of instruction are well grounded in findings from evidence-based research in cognitive science (see references cited in footnote 2), and give little attention to the 'causes' of under-achievement, learning difficulties, or to students' underlying abilities (Casey, 1994). Thus, DI programs are designed according to what, not who, is to be taught. Individual differences among students are allowed for through different entry points, reinforcement, amounts of practice, and correction strategies (Engelmann, 1999; Farkota, 2003a, 2003b, 2005; Hempstalk, 1996, 1997).

Direct Instruction is based on both the theory and evidence that learning can be greatly accelerated if instructional presentations are clear, minimise misinterpretations, and facilitate generalisations (Northwest Regional Education Laboratory, 2003). The principles upon which DI approaches are based include:

- all children can learn, regardless of their intrinsic and context characteristics;
- the teaching of basic skills and their application in higher-order skills is essential to intelligent behaviour and should be the main focus of any instructional program, and certainly prior to student-directed

learning activities; and

- instruction with students experiencing learning difficulties must be highly structured and permit large amounts of practice (Block, Everson, & Guskey, 1995; Bowey, 2000; Engelmann, 1999).

Evidence for the utility of DI for the acceleration of student learning has been well demonstrated in findings from Project Follow Through, the largest and most costly research study in the history of education, in which both constructivist 'student-centred' (or 'student-directed') models of teaching and 'teacher-directed' models were evaluated in terms of student learning gains.¹⁵ The project began in 1967 with US President Lyndon Johnson's 'war on poverty' and was government-funded until 1995 (Grossen, 1995). This massive government initiative was aimed at breaking poverty cycles by providing disadvantaged students with a 'better education'. Over a period of almost 30 years and at a cost of more than US\$1 billion, Project Follow Through included over 70,000 students in more than 180 schools.

The project's objective was to identify teaching methods that are demonstrably effective in improving the academic performance of students in America's underprivileged schools – from at and below the 20th percentile level to the 50th percentile levels (Adams & Engelmann, 1996). In the final analysis (Stebbins et al., 1977), students being taught under the Direct Instruction model scored close to the 50th percentile in every subject, while for the other student-directed models, students consistently scored beneath the 20th percentile. Analysts of Project Follow Through evaluation data were unanimous in their agreement that teacher-directed methods of instruction resulted in consistently stronger student learning gains than those obtained from student-directed methods (Bereiter & Kurland, 1981; Lindsley, 1992; Stebbins et al., 1977). An analysis of the comparison data reported by Engelmann et al. (1988) also showed that of all the teaching models evaluated in Project Follow Through, the student-directed models consistently obtained the lowest achievements in all subjects.

Meta-analytic syntheses of findings from more than 500,000 evidence-based studies of influences on student learning outcomes, including teaching methods, provide support for these results.¹⁶ For example, from such syntheses, Hattie (2003) has rank-ordered average effect sizes of commonly studied influences on student learning, as summarised below in Tables 1a and 1b, from which several features of the data are notable.

First, of the 32 'influences' listed, 29 have positive effects – 20 of which are related to teachers (i.e., 69%). Second, of the 14 stronger effects given in Table 1a (ES > 0.4 SDs), 11 (~79%) are influenced by teachers. Third,

teacher-directed practices that constitute key features of Direct Instruction modes of teaching have strong effects on student learning outcomes (i.e., ES > 0.65 SDs), namely: Instructional and Assessment Feedback, Instructional Quality, Direct Instruction, and Remediation feedback.

In commenting on these findings, Hattie (2003, p. 4) notes:

... the focus is to have a powerful effect on achievement, and this is where excellent teachers come to the fore – as such, excellence in teaching is the single most powerful influence on achievement. As can be seen from a sample of the possible influences, the major influence

near the top of this chart [Table 1a] is in the hands of the teacher. (Although we note some at the bottom, which highlight that it is excellence in teaching that makes the greatest differences, not just teachers.)

Given the compelling findings of Hattie's work (as well as that of Swanson, 1999; Swanson & Deshler, 2003), the results of Project Follow Through outlined above, together with the syntheses of research on effective methods for the teaching of reading documented in the reports of the National Reading Panel,¹⁷ one might well ask why these findings have failed to impact the policies and practices throughout the educational community.

Table 1a: Stronger influences on student learning

Influence	Effect Size	Source of Influence
Feedback (instructional & assessment)	1.13	Teacher
Students' prior cognitive ability	1.04	Student
Instructional quality	1.00	Teacher
Direct instruction	0.82	Teacher
Remediation feedback	0.65	Teacher
Students' disposition to learn	0.61	Student
Class environment	0.56	Teacher
Challenge of goals	0.52	Teacher
Peer tutoring	0.50	Teacher
Mastery learning	0.50	Teacher
Parent involvement	0.46	Home
Homework	0.43	Teacher
Teacher style	0.42	Teacher
Questioning	0.41	Teacher

Source: Adapted from Hattie (2003, p. 4).

Table 1b: Weaker influences on student learning

Influence	Effect Size	Source of Influence
Peer effects	0.38	Peers
Advance organisers	0.37	Teacher
Simulation and games	0.34	Teacher
Computer-assisted instruction	0.31	Teacher
Testing	0.30	Teacher
Instructional media	0.30	Teacher
Aims and policy of the school	0.24	School
Affective attributes of students	0.24	Student
Physical attributes of students	0.21	Student
Programmed instruction	0.18	Teacher
Ability groupings	0.18	School
Audio-visual aids	0.16	Teacher
Individualisation	0.14	Teacher
Finances/money	0.12	School
Behavioural objectives	0.12	Teacher
Team teaching	0.06	Teacher
Physical attributes (e.g., class size)	-0.05	School
Television	-0.12	Home
Retention	-0.15	School

Source: Adapted from Hattie (2003, p. 4).

In an analysis of why the results of Follow Through were not acted on, Watkins (1995) asserted that: “parochial vested interests that work to either maintain the status quo or to advance self-serving models can prevent the implementation of teaching methods, approaches, or practices that clearly have an impact on student learning outcomes” (p. 61). Vested interests can be those of policymakers, faculty staff in higher education institutions, teachers, school district administrators, publishers, and the general public. For instance, Watkins observed that policymakers frequently develop policy that is based on public support, or the ideological views of academic, social and political pressure groups, rather than on empirical evidence. They often rely on inaccurate or incomplete information that others provide. Stakeholders who exert power but ignore the evidence all too frequently influence them unduly.

From their analyses of findings from Project Follow Through, Bereiter and Kurland (1981) also noted competing pedagogical philosophies that prevailed at the time. But: “Philosophies don’t teach kids. Events teach kids...” (p. 16). The events that need to happen for students with and without learning difficulties are those devised by teachers for implementation in their classrooms. Above all, these events should be informed by a thorough evidence-based knowledge of what works, why it works, and how it works. To this end, the Australian Council for Educational Research, with funding support from the Australian Government Department of Education, Science and Training (DEST), has developed an evidence-based trial teacher professional development (PD) package entitled *Working-Out What Works (WOWW) Training and Resource Manual* (Hoad et al., 2005). This manual was used in a recent and highly successful national ‘Third Wave’ research project aimed at improving the literacy and numeracy achievement outcomes of students with learning difficulties who are in Years 4, 5 and 6 in mainstream government, Catholic and independent schools (Rowe, Stephanou, Hoad & Urbach, forthcoming).

Concluding comments

Findings from such research are entirely consistent with those from a large body of evidence-based research that indicates superior effects of initial direct instruction and strategy instruction approaches on student learning. So what made the difference to students’ learning and achievement progress for those in the intervention schools? Simply, teachers in the intervention schools (compared with those in the reference, or control schools) were taught how to teach via direct/explicit instruction teaching methods – informed by findings from local and

international evidence-based research.

In this context, it is worth noting the outstanding success of the transformational leadership provided by John Fleming, former principal of Bellfield Primary School – one of the most disadvantaged government schools in Victoria.¹⁸ Of particular relevance here is that Fleming, during an initial and subsequent visit by members of the Committee for the National Inquiry into the Teaching of Literacy, made it clear that regardless of teachers’ practical experience and the content of training received by the higher education institutions in which they obtained their pre-service education, he and several senior members of staff provided all incoming teachers with professional learning in the demonstrably effective evidence-based teaching strategies of direct/explicit instruction.¹⁹

Nonetheless, despite focus on the relative effectiveness of instructional strategies in the present paper, it is important to stress that pedagogical practices and instructional strategies per se are not independent of the teachers who deliver them to students, whether or not those students experience learning difficulties and externalising behaviour problems. That is, educational effectiveness for all students is crucially dependent on the provision of quality teaching by competent teachers who are equipped with effective, evidence-based teaching strategies that work, and are supported by capacity-building towards the maintenance of high teaching standards via strategic professional development at all levels of schooling (Darling-Hammond & Bransford, 2005; Hattie, 2003, 2005; Hattie, Biggs & Purdie, 1996; Hill & Cr_vola, 2003; Kennedy, 2001; OECD, 2001, 2005a, 2005b; Rowe, 2003, 2004a, 2004b, 2004c).²⁰

Further, it is important to note that the relative utility of direct instruction and constructivist approaches to teaching and learning are neither mutually exclusive nor independent. Both approaches have merit in their own right, provided that students have the basic knowledge and skills (best provided initially by direct instruction) before engagement in ‘rich’ constructivist learning activities. The problem arises when constructivist learning activities precede explicit teaching, or replace it, with the assumption that students have adequate knowledge and skills to efficiently and effectively engage with constructivist learning activities designed to generate new learning. In many instances, this assumption is not tenable, particularly for those students experiencing learning difficulties, resulting in disengagement, low self-esteem, dysfunctional attitudes, and externalising behaviour problems at school and at home (DeWatt, Berkman, Sheridan, Lohr & Pignone, 2004; Hinshaw, 1992a, b; Purdie, Hattie & Carroll, 2002; Rowe & Rowe, 1992, 1999, 2000; Sanson, Prior & Smart, 1996; Smart,

Sanson & Prior, 1996). Deleterious outcomes of these kind arise as a direct consequence of ‘putting the cart before the horse’ such that educational effectiveness for both teacher and student is denied.

It is also important to note that the ‘myth’ of educational effectiveness is grounded in a widespread failure to understand the fundamental distinction between structure and function in school education (e.g., Zvoch & Stevens, 2003). Whereas a key function of schooling is the provision of quality teaching and learning experiences that meet the developmental and learning needs of students is dependent on funding and organisational structures that support this function, the danger is a typical proclivity on the part of teachers and educational administrators to stress structure (e.g., single-sex schooling, class size²¹, etc.) and pedagogical strategies at the expense of function (quality teaching and learning). Unfortunately, such emphases are indicative of a pervasive ignorance about what really matters in school education (i.e., quality teaching and learning), and the location of major sources of variation in students’ educational outcomes (i.e., the classroom). It seems we need to be constantly reminded that schools and their structural arrangements are only as effective as the 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).

Unfortunately, there continue to be several barriers to reform that: (1) perpetuate prevailing ‘myths’ of ‘school 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 moribund and outmoded forms of biological and social determinism which assume that individual children – whether they be boys or girls – do poorly or well at school because of developmental differences, because they are ‘dumb’ or ‘smart’ or come from ‘disadvantaged’ or ‘advantaged’ backgrounds. In this context, Edmonds 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” (1978, p. 33).

The longstanding and widespread acceptance of these ideological beliefs and their expectations at the teacher, school and system levels have little substantive justification in the light of findings from emerging evidence-based research, including those from the ‘Third Wave’ Project. These findings 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 attentive-inattentive behaviours in the classroom. For example, Professor David Monk 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” (1992, p. 320).

More recently, and consistent with the longitudinal research findings reported by Hill and Rowe (1996, 1998) and by Rowe and Hill (1998), Cuttance (1998, pp. 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 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” (2001, p. vii).

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, 2004a, 2004b; Rowe & Rowe, 2002). As Slavin and colleagues’ evaluations of the ‘Success for All’ program among low SES schools in Baltimore and Philadelphia have shown, students who, regardless of their gender, socio-economic or ethnic backgrounds (including ‘compositional effects’) are taught by well-trained, strategically focused, energetic and enthusiastic teachers, are fortunate indeed (Slavin, 1996, 2005).

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 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 professional development. In this regard, the work and contributions of Ingvarson and of Bond et al. (2000) are of vital importance. For example, in the Australian context, 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, 1998a, 1998b, 1998c, 1999a, 1999b, 2000, 2001a, 2001b, 2002a, 2002b, 2003, 2005; Ingvarson, Elliot et al., 2006; Ingvarson & Kleinhenz, 2006; Kleinhenz & Ingvarson 2004).

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, p. 3).

For the sake of Australia's students and teachers, let alone the nation's social and economic future (or those of any nation), the enduring hope is that the importance of quality teaching and teacher quality 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 inservice professional development support that are commensurate with their essential status in terms of the invaluable contributions they are able to make to the enrichment of students' wellbeing and life chances, as well as to capacity-building for the nation's social and economic future (e.g., Cochran-Smith & Zeichner, 2005; Darling-Hammond & Bransford, 2005).

As already indicated, 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 an evidence-

based repertoire of pedagogical skills that are effective in meeting the developmental and learning needs of *all* students. Perhaps there is a need to be reminded that: "Ultimately, most of what we do in school education – including our efforts to 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, p. 2).

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Footnotes

- 1 Background paper to keynote address presented at the Learning Difficulties Australia conference, Melbourne, 19-20 August 2006 (Rowe, 2006a).
- 2 During 2004-2005, Ken Rowe was Committee Chair of the National Inquiry into the Teaching of Literacy.
- 3 The Terms of Reference of the Inquiry, including submissions and reports, are available from the Department of Education, Science and Training (DEST) website at <http://www.dest.gov.au/nitl/>
- 4 For the major NITL reports, see Rowe (2005a, 2005b).
- 5 This letter and accompanying explanatory notes (de Lemos, 2004a) have since been published by the Reading Reform Foundation, based in the United Kingdom, available for download at <http://www.rrf.org.uk/the%20australian%20scene.htm>
- 6 This predominance has been documented in several sources, including: de Lemos (2002, 2004a, 2004b); the 1992 Report of the House of Representatives Standing Committee on Employment Education and Training (The Literacy Challenge: Strategies for early intervention for literacy and learning for Australian children); in the Final Report of the NSW Parliament Inquiry into Early Intervention for Children with Learning Difficulties (2003); and in the review of literacy instruction in Australian primary schools by van Kraayenoord & Paris (1994). For a recent report of an investigation into the preparation of teachers to teach literacy (and numeracy), see Louden et al. (2005a).
- 7 See for example: Center, Freeman & Robertson (2001); Elbaum et al. (2000); Tunmer & Chapman (2003).
- 8 See: Clay (1985); Snow, Burns & Griffin (1998). For examples of 'third wave' intervention strategies, see: Ellis (2005); Hoad et al. (2005); Purdie & Ellis (2005); Rowe & Meiers (2005); Rowe, Pollard & Rowe (2003, 2005); Rowe, Rowe & Pollard (2004); Wheldall & Beaman (2000).
- 9 For a more comprehensive explication of the relevant issues discussed here, see Rowe (2006b).
- 10 See, for example: Adams & Engelmann (1996); Center (2005); de Lemos (2004a,b), Ellis (2005); Coltheart (2005a-c); Farkota (2003a,b, 2005); Hattie (2003, 2005), Hempenstall (1996, 1997); Hoad et al. (2005); Lindsley (1992); Purdie & Ellis (2005); Rowe (2005a, 2005b, 2006a, 2006b, 2006c); Stebbins et al. (1977); Westwood (1999, 2006); Wheldall (2006).
- 11 For succinct outlines of the various types of constructivism, see: McInerney & McInerney (2006, pp. 3-4); Purdie & Ellis (2005, pp. 9-11).
- 12 For example, see: Coltheart (2005b); Ellis (2005); Farkota (2003a, 2005); Hattie (2003, 2005); Purdie & Ellis (2005), Rowe (2005b, 2006); Westwood (2004, 2006); Wheldall (2006).
- 13 See: de Lemos (2002, 2004a); Fielding-Barnsley & Purdie (2005); Louden et al. (2005a-c); Rohr & Greaves (2004); Rowe (2005a, Appendix 2); Westwood (1999, 2004, 2006).
- 14 For recent and more comprehensive accounts of Direct Instruction, see: Ellis (2005, pp. 28-33); Farkota (2003b, 2005), Purdie & Ellis (2005, pp. 21-25), McInerney & McInerney (2006, pp. 174-180); Westwood (2006, pp. 16-19).
- 15 For the original report of findings from Project Follow Through, see Stebbins et al. (1977). Similarly, for more complete descriptions of the curriculum and the philosophies of instruction evaluated in Project Follow Through, see Kinder & Carnine (1991).
- 16 Meta-analysis is a statistical method used for summarising findings from many studies that have

- investigated a similar problem. The method provides a numerical way of assessing and comparing the magnitudes of ‘average’ results, known as effect size (ES) – expressed in standard deviation (SD) units. An effect size is calculated as the difference in performance between the average scores of a group in a trial or experimental condition and those in a comparison condition, divided by the SD of the comparison group (or more often, divided by the pooled SD of both groups). An effect size ≤ 0.3 is regarded as ‘weak’; 0.5 is considered ‘moderate’; and 0.8 or larger as ‘strong’.
- 17 In particular, see NRP (2000a, 2000b), and related references including: Camilli, Vargas & Yurecko (2003); Center (2005); Ehri et al. (2001); Rowe (2005b, pp. 20-23).
- 18 For an outline of the demographic intake characteristics of students enrolled at this school, together with a brief account of the outstanding, results achieved since 1998, see Caldwell (2006, pp. 139-142).
- 19 This professional learning was supported by Dr John Munro from the University of Melbourne. Dr Munro is an expert in integrated direct instruction and constructivist teaching approaches for student learning in reading and mathematics.
- 20 It should be noted that teaching quality and teacher professional development constitute major foci of the 2000 US No Child Left Behind (NCLB) policy (for specific details, see: Center on Education Policy 2003; LaTrice-Hill, 2002; US Department of Education, 2002). The importance of these elements have been particularly evident in findings from a longitudinal evaluation of the Restart Initiative in Victorian government secondary schools undertaken and reported by Rowe and Meiers (2005). Reading pre-assessment was used to identify Restart students, who were the lowest achieving group, and a ‘control’ group, whose performance was slightly higher than the identified Restart group. Key findings from the evaluation of the Restart Initiative from 2002 to 2004 indicate that significant and sustained gains in reading achievement progress were achieved by students taught by Restart teachers, many of whom had been trained in strategic reading instruction techniques, and supported by professional development in explicit reading instruction strategies provided by Dr John Munro – a reading research specialist at the University of Melbourne.
- 21 For almost 70 years, the contentious issues surrounding the link between class size and students’ educational outcomes have been hotly debated and extensively researched – particularly in the US and Britain. Reviews of this research, including 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 (e.g., Rowe, 2004b, 2004c). That is, the personal and professional characteristics of the teacher appear to be key factors associated with notable gains in students’ learning outcomes. 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 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 & Mortimore (1994); Glass (1992); Glass et al. (1982); Goldstein & Blatchford (1997); Harder (1990); Hattie (1987); Hill & Holmes-Smith (1997); Prais (1996); Robinson (1990); Slavin (1989, 1990).