Using Best Evidence Syntheses to Assist in Making a Bigger Difference for Diverse Learners

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The Ministry of Education's Iterative Best Evidence Synthesis[1] Programme is designed to bring together, and make accessible for policy makers, teachers, researchers and a range of educators (but particularly teacher educators) evidence about what makes a bigger difference for learners.

The term 'BES' is used to mean a best evidence synthesis iteration. To date the Ministry of Education has published four best evidence syntheses (BESs).

- *Quality Teaching – Early Foundations: Best Evidence Synthesis* (2003) by Sarah Farquhar
- *Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis* (2003) by Adrienne Alton-Lee
- *The Complexity of Community and Family Influences on Children's Achievement in New Zealand: Best Evidence Synthesis* (2003) by Fred, Jeanne and Chris Biddulph
- *Characteristics of Professional Development Linked to Enhanced Pedagogy and Children's Learning in Early Childhood Settings: Best Evidence Synthesis* (2003) by Linda Mitchell and Pam Cubey

These four best evidence syntheses published to date can be found on the Ministry of Education's website at www.minedu.govt.nz/goto/bestevidencesynthesis These are freely downloadable or if you wish to have hard copies the website provides an address for orders.

These syntheses are only available by request and have been much in demand. In 10 months there have been over 14,000 hits on the website (about 50–70 per day at present), and over 12,000 hard copies requested, many by secondary schools.

But how the syntheses are used (or misused) is critical to their value. Just knowing what the evidence reveals about what makes a bigger difference for learners is not sufficient. We have much to learn about 'being evidence-based, about using the evidence' about what works for students in ways that are respectful and supportive of the complexity of teachers' and other educators' work. We have much to learn about the kinds of professional learning and sharing opportunities that can lead to sustained improvements in classroom practice. We have much to learn, as a wider educational community, about effective school–home links that can be integrated into the daily practice of busy teachers and parents, in ways that improve teaching through strengthening the teachers' knowledge of what the learner brings from home, and through strengthening parental support for children's learning.

The best evidence about quality teaching comes from accounts of the work of teachers who are particularly effective in facilitating the learning of diverse students - at the same time - in the challenging worlds of everyday classroom life in English and Māori-medium. The fundamental challenge is that teachers simultaneously manage the learning of groups of diverse learners. The term 'diverse' is important because it recognises that the

1 The New Zealand Ministry of Education's *Iterative Best Evidence Synthesis Programme* owes a debt of gratitude to, is inspired by, but is quite different from Slavin's best evidence synthesis approach. See Slavin, R. (1986). Best-evidence synthesis: An alternative to meta-analysis and traditional reviews. *Educational Researcher*. 15(9), 5-11. *Guidelines* for the Iterative Best Evidence Synthesis Programme are being developed in consultation with the BES Standards Reference Group and will be available upon request from the end of June.

intersections of ethnicity, gender, socio-economic status of family and dis/ability including giftedness, and other characteristics that make up complex learner identities, shape what each learner brings to classroom learning. The *Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis* identifies approaches that not only lead to higher achievement for diverse learners, but also intensify peer supports for learning, thereby reducing the pressure on teachers and lessening teacher stress.

Principals can take a particularly valuable leadership role through a considered approach to using the syntheses in ways that support staff and enhance the learning of students in their schools. The syntheses provide a quick way into extensive and dispersed professional research literatures that are grounded in what really makes a difference in practice. In this way they provide tools to support pedagogic leadership distributed amongst principals, APs, DPs, HODs and teachers, but on their own they are insufficient to support deep change. Later in this article I am going to explore issues around the use of the Best Evidence Syntheses. In this next section I aim to make the thinking behind the Best Evidence Syntheses transparent. You may like to do a quick preliminary read of the practical suggestions in the final section '**How should we approach using the *Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis*?**' before reading this background material.

What is a Ministry of Education best evidence synthesis (BES)?

A BES is a synthesis of evidence linked to a range of desired learner outcomes, derived from both international and New Zealand research. Rather than assuming that findings from overseas studies could apply to the New Zealand context, cautious attention is given to what might be relevant and appropriate when interpreting the implications of international research findings for New Zealand contexts. The syntheses provide theoretical explanations which are deeply grounded in evidence of what worked. Theoretical tools that explain the findings can assist teachers and other educators to translate and adapt the findings to their own contexts. While a synthesis is a kind of summary that can encompass extracted information from hundreds of studies, particular emphasis is given to New Zealand case studies that exemplify outstanding practice in English and Māori-medium. Within each synthesis attention is paid to evidence about approaches that made a bigger difference for learners.

The synthesis approach means paying particular attention to research that traces the positive or negative impact of particular approaches or influences on learner outcomes. Research that is not linked to evidence about changes for learners is excluded (unless there is other evidence that substantiates claims made, in which case the status of the evidence is made transparent). A good reason for producing a BES is that there are bodies of research that influence educational practice, but do not provide rigorous evidence of a positive impact on learner outcomes. For example, there is international evidence[2,3,4,5] of no markedly positive (and, in fact, negative) impacts when teachers use learning styles approaches — especially when students are classified as kinaesthetic learners. The intention behind the approach is undoubtedly good, but even those who argue they have found significant evidence of effectiveness, tend to emphasise a multi-

2 Irvine, J. J., & York, D.E. (1995). Learning styles and culturally diverse students: A literature review. In J. Banks, & C. McGee (Eds.). Handbook of Research on Multicultural Education. MacMillan Publishing. (p. 487).

3 Riding, R., & Rayner, S. (1998). Cognitive styles and learning strategies. London: David Fulton Publishers.

4 McMillan, B. (2001). The serious limitations of 'learning style'. SET (1) 36-39.

5 The term 'learning style' is often used loosely in practice but in this context denotes a learner's apparent preference for an auditory, visual, tactile or other source and/or expression of information (identified through a learning styles inventory). Within this approach teachers are encouraged to match mode of information to the learner's preference. A review by Irvine and York (1995) of evidence about 30 instruments to measure learning styles, concluded that, despite the popularity of the Learning Styles Inventory, 'the design strategy, reliability and validity of the inventory were largely unsupported by the research evidence' (p.487). Riding and Rayner (1998) and McMillan (2001) highlight several concerns, including distracting teacher attention from the actual learning process, and the potential to restrict opportunities to learn.

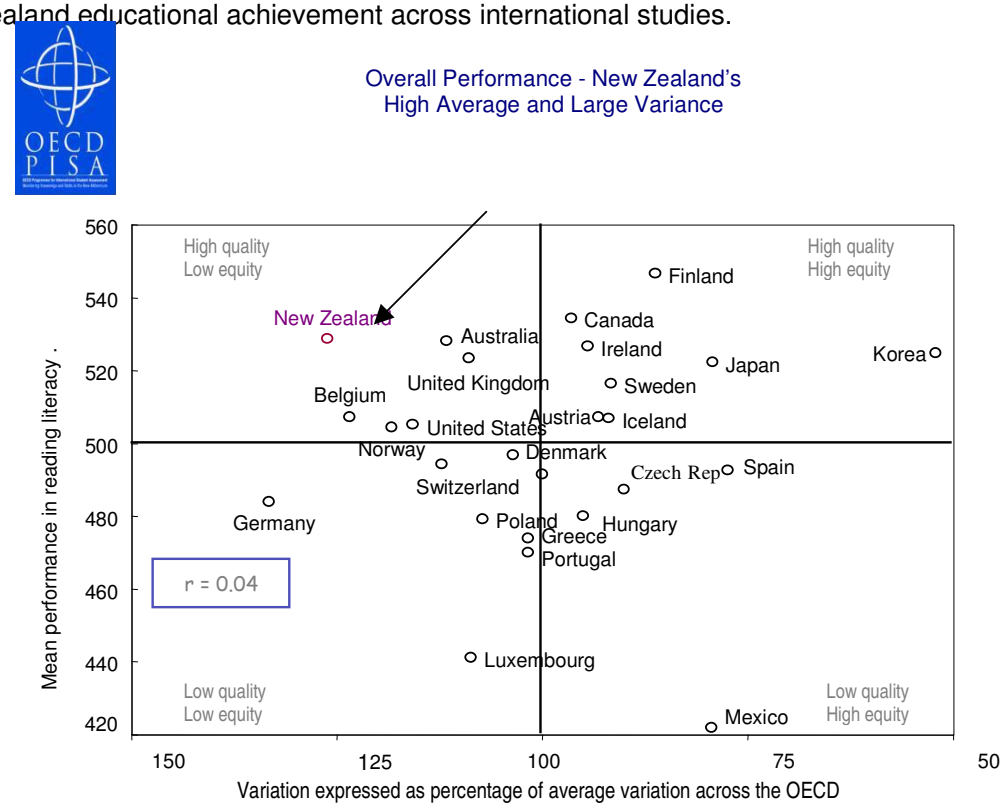
sensory approach (auditory, visual, kinaesthetic and so on) rather than a preference-matching approach. This issue is taken up in more depth in the *Quality Teaching for Diverse Learners in Schools: Best Evidence Synthesis.*

Developing a methodology to evaluate what should be in a synthesis, to analyse the body of evidence selected, and to identify what makes a bigger, a lesser or even a negative difference poses a substantial challenge. The Ministry of Education has worked collaboratively with the synthesis writers, and with a BES Standards Reference Group. We are developing and making more transparent, guidelines for writers and quality assurers about generating a best evidence synthesis iteration.

Each synthesis is an iteration that anticipates updating because of the changing nature of our knowledge. The purpose of the series of syntheses is to contribute to ongoing, evidence-based and evolving dialogue about what works amongst policy makers, educators and researchers, to inform development and optimise educational outcomes for New Zealand students.

Why Do We Need This Kind of Tool?

The inset graph depicts the Programme for International Student Achievement [PISA] mean results for 15-year-old achievement in reading literacy across OECD countries on quality and equity scales. New Zealand has high mean achievement, but our achievement disparities are second widest out of 30 countries – a pattern of disparity that recurs in New Zealand educational achievement across international studies.



Source: OECD (2001) Knowledge and skills for life, Appendix B1, Table 2.3a, p.253, Table 2.4, p.257.

Further analyses carried out of the PISA data[6] indicate that for New Zealand, such variance is predominantly within-school variance rather than between-school variance, suggesting an important role for New Zealand principals in both recognizing excellence within their schools, and building up the quality of teaching across the school.

6 OECD (2001). Knowledge and Skills for Life: First Results from PISA 2000. OECD: Paris. Table 2.4, Appendix B1, p. 257.

I have located only one study that has provided in published form a multi-level analysis of both teacher/class within school variance and between school variance for New Zealand data. That is the Second International Mathematics Study. Schereens, Vermeulen and Pelgrum (1989)[7] found the New Zealand between teacher/class variance to be 42% at the Year 9 level and differences between schools to be undetectable as a source of variance for these first year secondary students. The lack of school effect may reflect the short time the students had spent in their secondary schooling (less than a year). However, the teacher effect was dramatic. The Second International Mathematics Study included a longitudinal component with achievement data collected near the beginning of the school year and towards the end of the school year. An analysis of New Zealand data showed the average Year 9 student achievement within a class to increase for 194 out of 199 classes but of some concern was the finding that 5 out of 199 classes showed a decline or zero gain in average achievement over the year. This analysis also showed that many of the high gain classes had very low pre-test scores, and large proportions of Māori students and students from low socio-economic families. Garden, Wagemaker and Moody (1987)[8] concluded a strong teacher effect from this data and explained for this New Zealand evidence that *'schooling in mathematics does not necessarily result in the rich getting richer and the poor getting poorer'*. (p. 260).

Despite very high performance by many Māori and Pasifika learners in our schooling system, mean achievement for these learners show system underperformance – particularly for early school leaving and senior secondary qualifications of Māori. While 64% of all school leavers, and 55% of Pasifika, achieved at least one sixth form certificate in 2001, only 41% of Māori achieved at this level. This pattern for Māori persisted from 1993 to 2001 with no overall improvement. The NCEA provides the opportunity to shift this pattern but quality of teaching is critical to such a shift. The previous two School Sector Reports have shown higher achievement for Māori in Science, Mathematics, English and Te Reo at Year 11 and 12 in Māori Medium schools than in English-Medium. Statistics New Zealand's demographic projections indicate that 45% of our children will be Māori and Pasifika by 2021, giving even more urgency to the need for all of our schools to develop approaches to strengthen educational outcomes for these learners.

The achievement results discussed above, and addressed in more detail in the best evidence syntheses, show that much teaching is outstanding, but there is marked variability within schools in teaching effectiveness, and our system weakness lies in responsiveness to the diversity of our learners.

A Responsiveness to Diversity Framework

New Zealand population projections show increasing diversity by ethnicity and multiple cultural heritages. Over and above cultural heritage, classrooms and other educational groupings of students are always characterised by diversity or heterogeneity. The diversity of any group of learners can be unpacked across many dimensions. For example, diversity is a feature of the varied experiences the students bring to their learning of a particular topic, and their previous achievement levels in relation to the topic or skill area, whether high, average, low or gifted. What students bring to the classroom is in turn influenced by their gender, families, and wider affiliations and heritages, and the extent to which these become resources in their in-school learning. There are substantial research literatures that show these aspects of learner identity and background to be integral to educational achievement or failure, particularly when there are cultural mismatches between home and school.

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

8 Garden, R., Wagemaker, H., & Mooney, C. (1987). Explaining mathematics achievement. In A. Binns,, D. Carpenter, R. Elliffe, J. Irving, & N. McBride. (Eds.). Mathematics achievement in New Zealand secondary schools. Wellington: New Zealand Department of Education.

Students do not fall into simplistic categories by identity. Rather, for students, family social class, ethnicity/ies, cultural heritages, gender, and dis/ability intersect in ways that are often likely to be salient for their participation and learning. Further, students continually change and grow.

The daily and complex challenge for teachers is that they need strategies to teach a diverse group of learners effectively and simultaneously. This is where the evidence can be particularly helpful, because it identifies evidence-based strategies and approaches that have enabled teachers to be effective with their whole class.

How Does Each Synthesis Fit into the Series and Which are Particularly Relevant for School Principals?

Underpinning the series of syntheses is an Education Indicators Framework designed to focus on the overall health of the education system (see Figure 1 below).

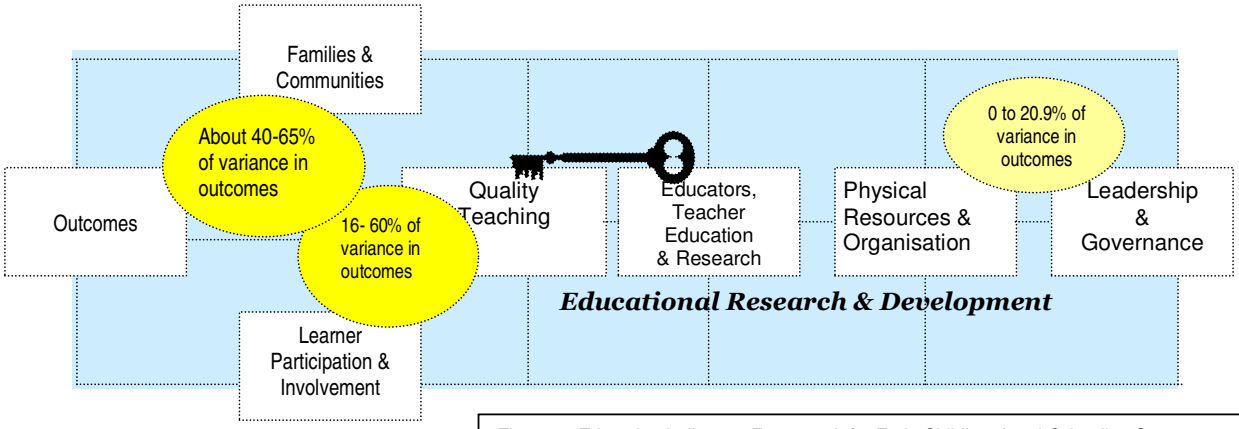


Figure 1. *Education Indicators Framework for Early Childhood and Schooling Sectors*

As depicted in the Education Indicators Framework, our best evidence linked to outcomes to date shows the family and community area of influence and the quality teaching influence to be the biggest influences on the variation in student scores. Accordingly these two topics have been the focus of the initial best evidence syntheses.

The Complexity of Community and Family Influences on Children's Achievement in New Zealand: Best Evidence Synthesis has played an important role in informing the Ministry of Education's inter-agency policy work about the role of influences such as family poverty and children's hearing loss on educational outcomes. The synthesis focused on family influences also has important implications for school principals and for teachers. This synthesis emphasises the importance of teachers taking agency to establish pro-active and strong (but not time-consuming) school–home links, and provides evidence about a range of ways in which principal leadership and school-wide policies can support effective links. Such links are critical. When the potential impact of families and schools is aligned positively around student learning, far greater impacts on student achievement (including social outcomes) are possible than those possible through either families or schools or each working independently of the other.

For interested principals, Johns Hopkins University has established a wide range of action–research based initiatives with a National Network of Partnership Schools focused on strategies that improve student achievement. The website address is http://www.csos.jhu.edu/p2000/focus.htm. It provides ongoing reports about what schools have found works that could provide a useful basis for considering what might be relevant and appropriate in the New Zealand context.

Notwithstanding the importance of family and school-home links, it makes sense for schools to begin their engagement with the best evidence synthesis work through the focus on quality teaching. The claim that teaching is so influential will seem self-evident to teachers, but much writing and popular opinion in education has given more weight to the school attended rather than the influence of individual teachers. The claim that classroom teaching accounts for up to three times or more the variance in achievement scores than school level influences, arises out of a systematic analysis of those research studies that have investigated both class teaching influences, and school-level influences, in multi-level studies of schooling.

For those interested, the underpinning analysis of evidence can be found in a paper on the Ministry of Education website

http://www.minedu.govt.nz/index.cfm?layout=document&documentid=8679&indexid=1004&indexparentid=1072 This evidence is particularly important where beliefs that teachers can't make much difference prevail. Page 10 of the *Complexity of Community and Family Influences on Children's Achievement in New Zealand: Best Evidence Synthesis* is a further resource for principals picking up on this issue.

Before leaving the Education Indicators Framework, it is noteworthy that the task of tracing more indirect links between learner outcomes and influences such as initial teacher education, professional development, school leadership, school resourcing, research and development and so on, poses a very difficult methodological challenge. The BES Standard Reference Group has a valued role to play in assisting us with this challenge. We do not yet have a published BES in teacher professional development for schooling but a project is underway to develop a new BES entitled 'Teacher Professional Learning (Schooling)'. As resources allow a series of BESs is planned over the next three years to help strengthen our evidence-base around processes of educational change.

In the interim, we have an invaluable resource in *Characteristics of Professional Development Linked to Enhanced Pedagogy and Children's Learning in Early Childhood Settings: Best Evidence Synthesis.* This synthesis identified key characteristics of the kind of professional development that worked for teachers in early childhood education, in ways that translated into enhanced learning for children. The findings of this synthesis provide a useful beginning place for principals and teacher educators thinking about professional development approaches that might help when using the BESs. Some characteristics of effective professional development excerpted from, and explained in full in that report on the www.minedu.govt.nz/goto/bestevidencesynthesis website are:

- The professional development incorporates participants own aspirations, skills, knowledge and understanding into the learning context.
- The professional development provides theoretical and content knowledge, and information about alternative practices.
- Participants are involved in investigating pedagogy within their own settings.
- The participants analyse data from their own settings. Revelation of discrepant data is a mechanism to invoke revised understanding.
- Critical reflection enables participants to investigate and challenge assumptions and extend their own thinking.

How should we approach using the *Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis*?

The best answers to this question will come from a range of New Zealand principals and others who have initiated and facilitated fit-for-purpose professional learning opportunities for teachers that are enhancing the quality of teaching across their schools. For example, you can read about Wendy Esera's approach to *Getting the Best out of Best Evidence* in the November 5 – 11, 2003 edition of the *New Zealand Education Review*. If you have experience of using the best evidence syntheses in ways that have strengthened learner outcomes we would be very interested to get feedback about your approach so that we

can make that information available to others. Please send feedback of this kind to best.evidence@minedu.govt.nz.

For those planning to use the *Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis* to support school development, there are three key issues for you as principal (or your leadership team) to attend to in getting started.

- **Be clear about the purposes for staff reading the BES.**
- **Provide time to read it!**
- **Plan a considered approach to using the BES as a resource to support the kinds of professional development activities that enable deep change.**

The following are suggestions, but they in turn need to be scrutinised, adapted, challenged and developed in ways that support improved outcomes for diverse learners in your school.

1. Being Clear About the Purposes for Staff Reading the BES

- The premise of the BES is that evidence-based approaches can lead to higher achievement for all learners, and this may provide a good rationale for using it in your school.
- It may be that the wide spread of achievement endemic in New Zealand schools is a pattern in your school. However, it is important to use data about what is happening in your school to inform your priorities. Choose an area of focus that an initial reading by you, your Curriculum Committee, or others taking a leadership role, suggests that the BES may be helpful — whether in the area of achievement, social outcomes, bullying, particular groups of students within the school who are not achieving highly and so on. Use the BES as a focus to address particular challenges your school is confronting.

- One strategy that was effective for Newlands Intermediate School was to begin with an initial survey of their Student Council members asking:

> Think about a curriculum area that you are good at. Why do you think you achieve well in this area?
>
> Think about a curriculum area that you really enjoy. What is it that makes it enjoyable for you?
>
> Now think about a curriculum area that you do not achieve well in. What do you think is the reason for this?
>
> Thinking about a curriculum area that you do not enjoy, what do you think is the reason why you do not enjoy it?

Principal, Wendy Esera, found that student responses fell under the headings of the 10 characteristics of quality teaching identified in the *Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis.* After reflecting on how curriculum-specific the students' responses were the principal and senior staff decided to survey all the students, but this time to include instructions for the students to tick a box to indicate which curriculum area they were commenting on. Examples of students' responses were:

I think I achieve well in this curriculum area because:

If I get something wrong it isn't a big deal and it doesn't really matter. You can do it again until you get it anyway.

I can learn it fast because I can always get help when it gets harder.

I think I don't achieve well in this curriculum area because:

I wish I was better but it is too hard and the teacher doesn't know that I get stuck sometimes.

Sometimes I just don't understand and it doesn't get explained well enough for me to understand it.

When I keep making mistakes I ruin things then I never want to even finish it.

I really enjoy this curriculum area because:

…no-one is allowed to make fun of you if you can't do things.

This approach provided a way of linking the professional development, and specific use of the BES, directly to the Newlands Intermediate learners' perspectives. These kinds of responses were motivating for the teachers. It is noteworthy that this approach was used in an environment where building trust was a key area of focus for the principal. What followed was an intensive professional development programme integrated into school and team planning and other processes. Individual staff performance agreements were negotiated in which teachers chose individual development objectives linked to quality teaching characteristics and based these on their reflections on their own teaching in their own curriculum areas. The student survey was repeated after the initial stage of the school-wide professional development and showed marked increases in student enjoyment of learning across the curriculum. Newlands Intermediate uses pre- and post-unit testing and reported measurable achievement gains associated with the lift in student enjoyment of learning. Newlands Intermediate now repeats the survey at the end of each term. Principal Wendy Esera reports that over three surveys there has been progressive and marked improvement in student enjoyment of learning and in student achievement gains across all curriculum areas. She perceives this sustained improvement to be a result of teachers deliberately focusing on the quality of their teaching practice. Early survey results also supported the Newlands Intermediate Board of Trustees to make a decision to allocate more operational funding to resources focussed on supporting teaching and learning.

- It is unhelpful to <u>begin</u> by using the best evidence synthesis is an accountability tool or as some kind of checklist approach. The BES should be used as a tool to support professional learning, and sufficient time is essential to this process. Once this has occurred, negotiate with staff appropriate and helpful ways in which the BES findings can be integrated into planning, self-review and other school processes.

2. **Providing Time to Read It!** The first principle of using the *Quality Teaching for Diverse Students in Schooling: Best Evidence Synthesis* advocated by the PPTA, and consistent with the evidence about what is helpful to teachers, is that **teachers need dedicated time to read the synthesis.**

- The executive summary is not a particularly helpful document used in isolation from the body of the synthesis, for the purposes of professional development. The synthesis is already a summary of a great deal of research. Attempts to take a short cut and summarise the summary are likely to provide meaningless information. Beware of lay summaries, checklists, mnemonics or any approach that restricts teachers to second-hand or superficial approaches, unless these are genuinely helpful in supporting the kinds of learning that makes a difference to everyday classroom teaching. As a summary of professional research, the synthesis is a technical report that acknowledges the complexity of teaching. We

have tried to make it as accessible as possible, but the research suggests that given the complexities of teaching practice, a more complex shared language of teaching is going to be more helpful to improving practice than simplifications that fail to acknowledge that complexity.

- Teachers need a chance to see how the evidence is exemplified in particular curriculum areas.
- Teachers also need a chance to identify particular examples or case studies that are based on real-life classroom examples. The little research evidence we have about that this issue shows real-life, detailed, research-based classroom examples to be much more effective for teacher professional development than either anecdotes or abstract principles. New Zealand teacher, Christine McNeight (1998)[9] introduced a school-home link for Samoan students within a senior secondary school classical studies class study of Roman religion, that led to her students' achievement levels more than doubling from what they had been in previous units of work, dramatically countering a record of failed assessments. The intervention involved students in a planned discussion with either a significant other at home or in the fono or wider community. The focus of discussion was the associative links between what they were learning about ancient Rome and traditional Samoan culture. Each day the students would share what they had each learned. McNeight reported that the effects continued after the intervention, as family members would ask the students and teacher what they were learning next in classical studies. In effect, the students' cultural heritages became a resource, and the students themselves the strategy to access that resource. This intervention exemplifies aspects of all ten key characteristics of quality teaching derived from the wider synthesis. It has been reported by many BES readers to be an example that has immediately inspired them to use, adapt and evaluate this strategy for Pasifika learners.
- Because a synthesis is by nature a summary of hundreds of studies, few actual case studies can be included. Accordingly, the synthesis also provides a map of particular studies or resources that would be worth retrieving for more in-depth study of issues of practice relevant for your school. For example, some evidence suggests that peer group work is often used very loosely in New Zealand schools, even at times subverting learning rather than bringing about the strong gains for social and academic outcomes possible when group work and group tasks are well structured. It may be helpful to ask two members of staff to follow up on classic texts references in the BES, such as Elizabeth Cohen's *Designing groupwork* (published in 1986 by Teachers College Press, New York) and her more recent 1994 review *Restructuring the classroom: Conditions for productive small groups* published in the *Review of Educational Research* [Volume 64 (No.1), pages 1–35].

- Also HODs or others who are interested may wish to follow up on the individual chapters on research on teaching in mathematics, geometry, high school biology, physics, chemistry, science, physical and cultural geometry, and economics education in Jere Brophy's *Subject-specific Instructional Methods and Activities* in the *Advances in Research on Teaching Series* published in 2001 by Elsevier Science.

- For those schools working with many ESOL students Robert Marzano, Debra Pickering and Jane Pollock's consideration of the use of non-linguistic representations in teaching in their book *Classroom Instruction That Works: Research-based Strategies for Increasing Student Achievement* published in 2001 by the ASCD http:/www.ascd.org may be of interest. These are only

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- 9 McNeight, C. (1998). *"Wow! These sorts of things are similar to our culture!" Becoming culturally inclusive within the senior secondary school curriculum.* Unpublished graduate research report,. Wellington: Department of Teacher Education, Victoria University.

examples. Your staff will be able to identify examples that may be of particular value for your students' needs, and it is likely that New Zealand studies are of particular value.

- It is important to make the reading time manageable and to provide opportunities for teachers to discuss what they are reading. The hard copies of all of the syntheses have been stapled for ease of splitting up and photocopying sections for those who wish to organise reading section by section with time for follow-up discussion at staff meetings or workshops. Some school principals have arranged relief teaching. Others have organised reading opportunities by syndicate or curriculum area. Whatever actually works for your teachers is what you should do.

- Principals will also be aware of the needs and teacher leadership strengths amongst their staff. Teachers who have not substantially encountered the traditions of research on teaching within their pre-service teacher education are likely to be dismayed because they have not previously had access to this kind of knowledge about their practice, and will need a lot more support in their initial encounter with the BES. On the other hand, many teachers have been involved in research studies, or have carried out their own postgraduate research studies using action research and other approaches, and they will bring particular depth of knowledge as an invaluable resource for your school. Many New Zealand education theses carried out by practising educators have been an invaluable source of research for the best evidence syntheses. In particular, the wide range of masters and PhD theses by Māori educational researchers is providing a rich source of insight into improving educational practice.

- The timing of the reading phase also needs careful planning. Some secondary schools are using different approaches to lead into the BES. For example, they are taking time to build trust, and to enable pairs of teachers to observe in each other's classrooms, and to discuss what they are learning from observations of their own and each others' teaching before they read the BES.

3. Planning a considered approach to using the BES as a resource to support the kinds of professional development activities that enable deep change.

- Given that the evidence suggests that effective professional development is likely to involve teachers investigating pedagogy and analysing data within their own settings, it is critical to plan the kinds of conditions and supports that would enable this to happen in ways that teachers are keen to participate. You may be seeking to begin with volunteers as you work out a good process. Hillmorton High School has taken this approach, and is using David Hopkin's work on teacher action research and school improvement to guide their approach. Other schools are likely to be using similar approaches. This is an area where we all need more evidence about what works.

- A successful strategy may require working with very small areas of focus to begin with. For example, a powerful area of focus could be the use of metacognitive strategies across the curriculum. Such strategies are often curriculum-specific and involve teaching students to think about their own thinking, what they know, what they don't know, and what kinds of learning strategies can help them succeed when confronting any new task. Specific metacognitive strategies benefit students with special needs, students whose cultural backgrounds differ from the cultural milieu of the school, and benefit low achievers to high achievers, including gifted achievers. They help make task requirements more transparent and they empower learners to be pro-active and reflective in their own learning. Teacher leaders from each curriculum area could do some follow-up work, and explain what the research reveals about effective metacognitive strategies in their curriculum areas. Think out of the square. For example, one secondary New

Zealand teacher used the 'Thinking Book'/'Thinking Journal' approach to ensure her students did not arrive late to her secondary English class as they had been doing. Each day she would have the student journals with her comments ready before class. The change was dramatic and students started getting to class early to see her feedback. As teachers share ideas across different curricular areas this can help develop shared understandings and alignments around quality teaching. I have suggested metacognition as a beginning focus because the evidence suggests that metacognitive strategies can help to forge achievement gains of up to a year's achievement difference over business-as-usual teaching — but any selected area of focus relevant to learner needs in your school could be similarly an area of initial focus.

- Advisers, teacher educators, researchers, local university lecturers, college of education staff and other educators may also be available to assist with an evidence-based approach to change that works, not only for your staff but also for your students.

Where the Ministry of Education is Going with the Ongoing Iterative Best Evidence Synthesis Programme

The Ministry of Education is about to commission four new best evidence synthesis iterations. The areas of focus are:

- quality teaching for diverse learners in mathematics
- quality teaching for diverse learners in social studies/social sciences
- teacher professional learning, and
- quality teaching in tertiary education.

The curriculum-focused quality teaching BESs should help make available a range of relevant case studies, many drawn from the work of New Zealand teachers and researchers. We are also seeking to strengthen the ways in which the BESs are used as a resource to develop educational practice in ways that support all of our learners.

Any feedback on this article, criticism, suggestions or accounts of how the best evidence synthesis work is useful in your school would be welcome at best.evidence@minedu.govt.nz

If you want to read more about the rationale behind the iterative best evidence synthesis approach the article *Improving Educational Policy and Practice through an Iterative Best Evidence Synthesis Programme* prepared for an OECD Meeting on Evidence-Based Policy April 19 2004 can be found on http://www.excelgov.org/displayContent.asp?NewsItemID=5205&Keyword=prppcEvidence