

**Collaborating across Policy, Research and Practice:
Knowledge Building for Sustainable Educational Development**

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The Iterative Best Evidence Synthesis (BES) Programme is a collaborative knowledge building approach across policy, research and practice. The Iterative BES Programme synthesises and explains evidence about what works for diverse learners. The primary purpose of the programme is to support sustainable educational development whereby a whole education system and its communities strengthen a range of desired outcomes for all learners through iterative processes of shared knowledge building and use. The iterative approach is designed to be a collaborative tool and catalyst to intensify and embed the interplay of research and development (R & D) as a systemic lever for sustainable development in education.

I have been asked by the organisers of the joint OECD/Netherlands Evidence Based Policy Research [EBPR¹] Conference – *Linking Evidence to Practice*, to focus on the model and role of the Iterative BES Programme as a brokerage agency for evidence-based policy research, and to examine its strengths and weaknesses.

This paper builds upon a paper presented to the 2004 joint OECD/US Evidence Based Policy Research Conference². In that paper considerable attention was given to the rationale for our realist and fit-for-purpose methodological approach to synthesising bodies of evidence. That paper explained for BES development: the importance afforded local context, the rigorous pluralist approach, the search for theoretical coherence, and the use of a ‘jigsaw methodology’ to synthesise research that provides credible evidence about influences on a range of desired outcomes for diverse learners (the *what, what magnitude of impact, under what conditions, for whom, why, and how*).

I begin this paper by briefly focussing on current national and global educational challenges. I also provide some background about R & D as a system lever to foreground the role of BES as a tool to support sustainable development. Then I explain how the Iterative BES Programme is a collaborative approach led from a national policy agency. I explain the nature of the engagement with and amongst: researchers and teacher educators, teachers, educational leaders, policy workers and policy makers, and the brokerage role of the Iterative BES Programme. I attend to weaknesses and strengths inherent in the work and to lessons we are learning as we

engage in this work. The process of identifying weaknesses in the work has been a deliberate, pro-active and ongoing tool to strengthen this cumulative knowledge building approach and particular attention is given to the 'iterative approach' in this paper. The emphasis of this paper is on the Iterative Best Evidence Synthesis Programme as a collaborative strategy to stimulate and optimise the potential of R & D for sustainable educational improvement in New Zealand.

The Iterative Best Evidence Synthesis Programme was only formally established in late 2003. To date our thinking about 'use' of evidence is that it has its seeds in the synthesis development process rather than following in some linear way. Thinking about use of evidence should be fundamentally informed by an evidence-based approach to sustainable educational development. This paper explains how work-in-progress on educational change processes and interaction amongst policy workers, researchers, educators and educational leaders is informing 'use'.

New Challenges for Strengthened Performance of Education Systems

There are new challenges for education systems in knowledge societies. It is no longer sufficient for education systems to sort learners into those who pass and those who fail. Rather all learners need to be well-served by their education to develop their capabilities, their sense of belonging, their well-being and their abilities to succeed and contribute to wider communities. Governments are looking to education systems to rise to the challenge to be more responsive to the diversity of their learners and to meet the higher expectations and future-focus required by knowledge societies.

The PISA³ studies show marked differences amongst education systems in how well 15-year-old students are able to apply their learning in mathematics, science and reading literacy. They also show marked differences in disparities between groups of students within countries. New Zealand has high mean scores, performing in the second highest band of countries across the PISA studies. But New Zealand's results show relatively high disparities in achievement by comparison with most OECD countries. Despite, high achievement by many Māori and Pasifika learners, there is a pattern of poor outcomes, particularly for Māori from New Zealand schooling.

The high disparities, the relatively high variance within schools in the New Zealand PISA results, and our rapidly growing demographic profiles for those learners traditionally underserved by New Zealand schooling, indicate a need for community and system development to be more responsive to diverse learners.

Accordingly our collaborative knowledge building work has at its foundation the goal of being more effective with diverse learners – at the same time. This goal recognises the day-to-day challenge for educators from early childhood, schooling through tertiary and adult learning. Educators need to be working effectively and simultaneously with students with different prior knowledges and experiences, speakers of different languages, high and low achievers, students with multiple, fluid and complex ethnic, gendered and social class cultures, heritages (including indigenous heritage) and identities, and students who bring varied dis/abilities and cultural resources to their learning.

Because the context for this work is New Zealand, all BES developments are informed by, and inform educational practice in both Māori and English-medium education. Māori have a treaty relationship with the Crown that protects Te Reo (Māori language) and tikanga Māori (Māori culture) and guarantees Māori the same educational opportunities as non-Māori. However, the published BESs provide substantial evidence over some decades of inequitable teaching of Māori learners (fewer teacher-interactions, less positive feedback, under-assessment of capability, mispronounced names and so on)⁴. Although Māori medium education has only been a very recent system provision in New Zealand, and despite resourcing challenges in a language revitalisation context, early cohorts of students emerging from continuous Māori medium education are performing more highly than Maori students in English medium contexts.

There is much evidence that reveals difference to be salient in education, albeit in complex and context-specific ways. Our approach is to put difference at the centre of this work through a ‘responsiveness to diversity’ framework. Because difference is a characteristic that all learners share, the approach allows for a ‘universalising discourse of difference’ (Britzman, 1995⁵; Town, 1998)⁶. This approach moves away from ‘norm’ and ‘other’ thinking that has constrained mainstream educational thinking to focus on the homogeneous and the ‘mean’ and seeks to strengthen our evidence base about what works for all learners.

While the Iterative Best Evidence Synthesis Programme is designed to work across early childhood, schooling, tertiary, community, industry and adult learning our progress to date has been in the family and community, early childhood and schooling areas. For the purposes of this paper the context of schooling is predominantly used to illustrate the rationale.

The Role of R & D in Strengthening Educational Practice for Diverse Learners

It is the goal of practice being more effective for diverse learners that drives our approach to knowledge building and use. The syntheses bring together and explain bodies of outcomes-linked evidence about educational approaches that optimise learning for diverse learners simultaneously. This evidence foregrounds partnership research and development between researchers and teachers that demonstrates, for example⁷:

- how ongoing attention to evidence about the prior knowledge, thinking, experiences and learning processes of the particular learners in any context is critical to effectiveness;
- how to increase student self-regulation and use of metacognitive (learning to learn) strategies;
- how to enhance student social and collaborative skills in ways that strengthen both social and academic outcomes;
- how to develop productive learning communities at each level of the education system whereby cognitive conflict is valued, managed and used to enhance learning, and peer supports for learning are intensified;

- how to provide challenging educational environments wherein the sense of belonging, the well-being of learners and teachers, and enjoyment of learning are nurtured; and
- how to optimise effective linkages with families and communities that strengthen learning outcomes.

An understated theme across these kinds of outcomes-linked research and development findings is that there is outcomes-linked pedagogical research that can strengthen sustainable ways of working with learners that reduce the stress of teachers and educational leaders.

However, while the examples of research identified above arise out of substantial traditions of R & D much of this research is unknown to many teachers, educational leaders, policy workers, policy makers and even teacher educators. There is a strong tradition leaning towards craft practice within education and teacher education.

‘Craft practice’ is used here to mean the model of teaching where practice is based on teachers’ experience, where there is discussion about teaching matters but involvement in other teachers’ day-to-day practice in classrooms occurs normally only in the context of pre-service practica. There is emphasis on management and discipline, evaluation is based on judgement about how the teaching went rather than consideration of the children’s learning, and the prevailing norms and practices of classrooms are maintained. A craft practice approach does not involve engagement with R & D around pedagogy.

Doyle (1990)⁸ provides a contrasting framework of a ‘reflective professional’ approach to teaching which focuses on reflective capacities of observation, analysis, interpretation and decision-making linked to data about children’s learning. The knowledge base for the reflective professional is not exclusive of, and values the craft knowledge of skilled teachers but also includes pedagogical, subject, socio-cultural and other knowledge from the social sciences and the use of formative assessment and inquiry processes to inform teaching. Evidence-based practices become embedded within everyday educational practice.

Despite the fact that research about pedagogy is a potentially invaluable record of the work of teachers, there is stronger ownership of that knowledge by researchers than teachers and teachers are rarely named as co-authors of research reports about their work. Teachers have often had reason to find the educational research they have encountered of little appeal or practical help (Kennedy, 1997)⁹.

We have had a strong positive response from both New Zealand’s teacher unions to the best evidence synthesis work; however, the response from teachers nationally has varied. One response from educators has been the realisation that there are substantial traditions of potentially helpful research about their core professional work of which they had been unaware, even through their initial teacher education.

A consideration of the status of R & D, and educational research in general, in New Zealand provides insights into the barriers and potential for future development.

The Quantum and Place of R & D in Education

A definition of educational research and development commonly used by the OECD Centre for Educational Research and Innovation is:

Educational research and development is a systematic, original investigation or inquiry and associated development activities concerning the social, cultural, economic and political contexts within which the educational systems operate and learning takes place; the purposes of education; the processes of teaching, learning and personal development of children, youth and adults; the work of educators; the resources and organisational arrangements to support educational work; the policies and strategies to achieve educational objectives; and the social, cultural, political and economic outcomes of education. (OECD, 1995, p. 37; CERI, 2001)

An example of effective and systemic R & D in New Zealand is the Numeracy Development Project/Te Poutama Tau. This project involves communities of New Zealand mathematics education researchers, teacher educators, teachers and policy workers in a national professional development programme which has a research process embedded within it. Teachers carry out diagnostic interviews with their students in order to guide their pedagogical approaches and maintain records of their students' progress on a national database.

The professional development (PD) includes conceptual and resource development and processes of teacher collaboration, observation and reflection. The pedagogical emphasis has been focussed on the mathematical ideas, students' metacognitive strategies and strengthening learning community amongst students. There has been an iterative cycle of development and evaluation in the Numeracy Development Project which has recently, partly as a response to findings from BES work, focussed teachers on better meeting the needs of diverse learners.

Conservative analyses¹⁰ of the 2004 data for 70,000 NZ students in Years 1 to 8 (English and Māori medium) showed progress to a higher stage was greater for all ethnic groups than in 2003 and for the first time in five years there was a decrease in disparities between groups. Although the average effect size advantage for addition/subtraction was only modest (0.19 which is comparable with the UK Numeracy initiative gains) the average effect sizes for multiplication and proportion/ratio were more than double these (0.40 and 0.43) reflecting the emphasis on more advanced mental strategies in the New Zealand development. Of particular importance has been feedback that teachers in both English and Māori-medium schools value the Numeracy PD very highly compared to other kinds of professional development.

Although there is increasing evidence of the potential value of R & D, a 2003 OECD report¹¹ identified the relatively low proportion of funding afforded to R& D in education and the challenges this raises for knowledge societies.

A rough estimate of the level of educational R & D as a percentage of total expenditure on education is on average less than 0.3% in six countries for which data are available. This is a very small figure when education is

compared with other knowledge sectors, for example, the health sector where between 5-10% of the total health expenditure in public and private sectors are directed to R & D.' (p.11).

The OECD Report includes an assessment of educational research in New Zealand and estimated educational research funding to be even lower than that for other OECD countries at between 0.17- 0.20%:

At the same time New Zealand invests far less in research and development of any kind than other developed countries, and has far lower R & D personnel per million population than Australia or Western European countries. New Zealand is successful educationally, but is, by R & D standards, not becoming a knowledge economy. (p. 89).

Government strategies in New Zealand have followed or been in train to lift research activity. For example; the establishment of a \$2 million annual grant for researchers to work in partnership with institutions to do R & D focussed on needs identified by researchers and educators: The Teaching and Learning Research Initiative.

Tertiary policy has also led to the establishment of additional funding to Centres of Research Excellence in tertiary institutions. However, none of the new Centres is focussed on education. In 2003 the first national assessment of the quality and extent of research activity of the tertiary sector was conducted: The Performance Based Research Funding (PBRF) Quality Evaluation.

The results of the PBRF showed educational research in New Zealand to have the third highest ranked numbers of A-ranked researchers (research of world-class standard) of any discipline. The number of A-rated researchers in education was outranked only by academics in engineering and technology.

However, the evaluations indicated that the submitted research portfolios for almost three quarters¹² of tertiary academics working specifically in education were evaluated as either research inactive, emergent or not demonstrating good-quality research; which meant that education was one of the poorest performing subject areas across the board¹³. Even if the poor performance underestimates valuable unreported R & D activity such activity is unavailable to inform development more widely through publication.

The Education Peer Review Panel (2004)¹⁴ concluded that the *'there is clear evidence of a critical mass of nationally and internationally excellent researchers in education in New Zealand and this augurs well for the future of our discipline'* (p. 283) Despite this optimism for the future, the need for R & D to improve practice for diverse learners is pressing, and there are areas of concern.

Closer links between research and practice are mitigated against because of at least five factors. These are:

- the uneven distribution of the excellent researchers across tertiary institutions;
- much of the quality research may not be oriented towards R & D (only a proportion of the available quality research focuses on the project of improving educational practice which is small subset of the wide-ranging interests of academics in education);
- the relatively low prevalence of quality research in some teacher education institutions,
- research quality in New Zealand education was assessed as lowest in teacher education, e-learning and curriculum (with the exception of mathematics and science); and
- undermined social capital in the form of networks and relationships fostering trust and reciprocity in New Zealand educational research was identified as a national weakness in the OECD Review (2001)¹⁵.

This last factor raises concerns that many educational researchers may be working in quite siloed ways in New Zealand. This can mean researchers ‘rediscovering the wheel’ rather than engaging with, and building on the work of others. This problem has been highlighted particularly in a recent review of New Zealand research on initial teacher education¹⁶.

Overcoming these barriers to the escalation of R & D in New Zealand education is critical because to understand and strengthen New Zealand education we need New Zealand R & D. The international research provides a substantial resource for public policy in a small economy. But, when using international research, New Zealand educators and policy-developers need to know if what the evidence indicates works in other countries would apply in the New Zealand context, given regulatory, policy, institutional, cultural, language, professional and other contextual differences, for example, the ways in which indigeneity is salient and the nature of school-based self-management in New Zealand.

Further, to bring about effective change we need the practice and benefits of R & D to permeate New Zealand education. Critical to the potential role of R & D as a lever for change is the degree of inter-relationship between research and development. The potential of collaborative and systematic action research for change exemplifies the power of an ongoing and iterative cycle of feedback and improvement when R & D inform each other.

This notion of an interdependent process between R & D in education contrasts with traditional approaches where educational resource development¹⁷, innovation and research may be occurring independently of each other, with all the risks for teacher burnout and ineffectiveness for learners that bandwagonism can bring with it, and without the leverage for realistic, effective, cumulative and sustainable development possible when R & D are interdependent.

The goal of the Iterative Best Evidence Synthesis Programme is to bring together previously inaccessible research evidence about what works in an iterative process of synthesis development that builds upon R & D, informs R & D, is a capability building tool for R & D and becomes a stimulus for intensified R & D activity across policy, research and practice in ways that improve practice.

Attending to a Range of Desired Outcomes

Our approach to the selection of evidence within a synthesis recognises that within a democracy, desired outcomes from an education system are part of an agreement within the wider society and between educational institutions and their communities. Desired outcomes are by nature subject to a contested and evolving discourse about what parents and wider communities want for all our learners.

Accordingly BES writers are required to seek out research evidence relevant to a range of outcomes previously identified in consultative processes with wider communities including academic outcomes, skill development, social outcomes, cultural identity, disposition as a learner, self-regulatory skills, enjoyment of learning, preparation for local and global citizenship and success and well-being, rather than just a narrow focus on particular measures of academic achievement. Particular emphasis is placed on evidence about approaches that strengthen a range of outcomes at the same time. For example, research focused on outcomes-linked evidence about the interdependence of the social and the academic in mathematics education (Cohen, 1994¹⁸; Stein, 2001¹⁹).

While there is likely to be consideration of evidence of impacts on a wide-range of student outcomes in every BES, the focus on research that has illuminated impacts on learner outcomes is incontrovertible in BES development and the justification for the use of the term ‘best’. That is ‘best’ does not mean ‘best available’; rather ‘best’ denotes evidence and explanation about how educational or other processes impact positively on a range of outcomes for diverse learners.

Part of the rationale for the incontrovertible concern with impacts on learners is the compelling evidence across studies that have linked teacher goals, learning processes and student outcomes, that well-intentioned, caring and experienced teachers can unknowingly teach in ways that have impacts counter to their own goals (Doyle, 1983²⁰; Nuthall, 1999²¹; Alton-Lee, Nuthall & Patrick, 1995²²; Bossert, 1979²³). This finding is apparent, for example, in research about unintended impacts of social studies in exacerbating racism (Cole, 1998²⁴; Donn & Schick, 1995²⁵; Osler & Starkey, 1999²⁶; Seixas, 2001²⁷; Shaver, 1999²⁸).

Policy advice has a legitimate role in giving precedence to impacts on learners in education. However, when evidence-to-practice policy work does not genuinely and positively support educational development, then cynicism will result²⁹, and opportunities for collaborative development can be in jeopardy. The later sections of this paper endeavour to make transparent our approach to a principled agenda and process for collaboration.

Building Sustainability through a Strategic Health-of-the-System Approach

Because of concern in policy agencies to ensure accountability of government spending on interventions, systematic reviews are sometimes commissioned to focus on evaluations of interventions. The focus of the evidence-based engagement can be more narrowly focussed on the links between policy interventions and practice with research playing an evaluative but not a cumulative developmental role in that link. Pawson (2001)³⁰ warns of impoverished knowledge building when there is insufficient attention to explanation of the underlying causes or mechanisms mediating impacts of interventions. A risk of an overly policy-focussed approach is the failure to advance sustainable development when expensive experimental evaluations are insufficiently able to address or explain the problems of poorly

designed, theoretically impoverished interventions that do not optimise systemic levers.

This Iterative Best Evidence Synthesis Programme takes a health-of-the-system perspective in which there is a broad concern with how infrastructure, wider policy settings, and interactions amongst the multiple communities within an education system contribute to a system that is functioning effectively for all its learners. This means considering an evidence-based approach to larger accountabilities for government expenditure and policy settings, not just those focussed on new interventions.

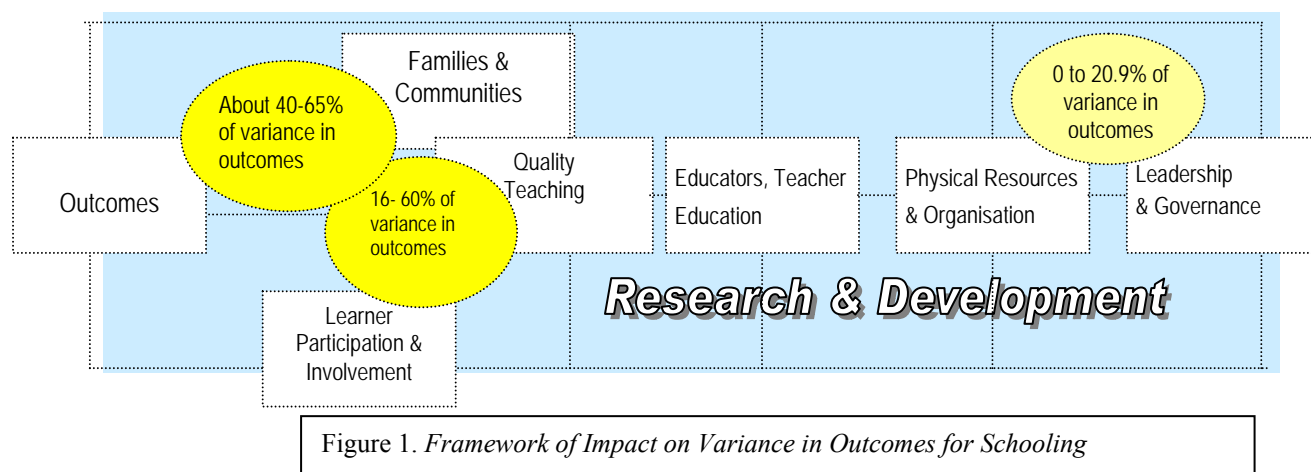
This approach has many ramifications for our evidence-based approach. For example:

- there is a need for attention to inter-linkages across BESs and evidence-based theorising of intermediary, and inter-linked influences on outcomes;
- there is the need for attention to the educational impact of culture and cultural mismatches between institutions and families and communities;
- particular weight needs to be given to outcomes-linked research case studies that illustrate and explain contextualised examples of effective practice in New Zealand;
- the model calls for attention to changes in system impact over time requiring a wider search than in many other synthesis activities;
- there needs to be more weight given to analysis and evaluations linked to outcomes that consider not only the specific evaluations at the school or classroom level but also the ways in which broader policy, infrastructure, regulatory and ‘implementation’ influences can tribute to outcomes (for example, Annan & Robinson, 2005)³¹.

Considerations of evidence-based use and sustainability call for attention to the ways in which policy interfaces with wider infrastructure for R & D in the tertiary sector. For example, if the Ministry of Education were to use the BESs to inform the work of contracted providers of teacher professional development without linkages to the ongoing work of postgraduate courses, and thesis supervision for educators in tertiary educations, then the impact could be superficial and short-lived. The evidence-based development would, in effect, be by-passing the engine of knowledge production, dissemination and qualification gate-keeping that is integral to the role of tertiary institutions, and is so influential in shaping the nature of professional knowledge and practice in education nationally. The BES approach seeks to achieve improvement and sustainability through embedding the iterative process of development and use in business-as-usual infrastructure.

What Makes a Bigger Difference?

We have used the framework in Figure 1 below as a way of pulling together our available evidence on the relative impact of different influences on the variance in learner outcomes from schooling.



A literature review³² commissioned by the Ministry of Education indicated that about 40 to 65 percent of variance in outcomes is attributable to the influences of family and communities, depending on the outcome of focus. An analysis³³ of multi-level studies of school and teacher/class influences showed the impact on variance at the teacher/class level to be variously 16 percent to 60 percent of the variance in learner outcomes, depending on the subject area, level of schooling, and outcome of interest. The largest teaching impacts on variance have been identified in a recent Australian study across a wide range of subjects at the senior secondary school level^{34,35,36}. A limitation of this framework to date is that most of the multi-level modelling studies on school and class effects restrict their consideration to academic outcomes.

The impact on outcomes of school level influences (from 0-20.9% of impact on variance) varied considerably depending, for example, on the length of time the learner had spent in the school, the subject area, and school level policies such as allowing, or not, lower achievers to be assessed. But the school level impact was consistently far smaller than that at the teacher/class level both for primary and secondary education.

This overview of influences on variance in student outcomes provides both an indicator that can direct shared knowledge building to the areas of potentially larger direct influence such as families and teaching and to critical mediating influences such as teacher education, leadership and resourcing.

The implications of this overview analysis for thinking about the policy importance of teaching have drawn the most critique of any aspect of the Iterative Best Evidence Synthesis Programme. So before addressing the policy importance of effective teaching for diverse learners, it is important to emphasise the importance afforded to family and community influences in this analysis of impacts on variance in student outcomes. There are four key implications that have arisen from our initial best evidence synthesis on family and community influences on outcomes:

- The impact of wider social and economic policies on families & community influences should not be under-estimated.

- The implication of the wider impacts of families and communities is that an EBPR approach requires strong interface between educational policy and wider social, economic and health policy.
- Notwithstanding the implications above, there is much New Zealand evidence that teacher deficit attributions to families and students can pose a barrier to effective practice, particularly for diverse students.
- An R & D approach to school-family linkages/partnerships in which the school takes agency can have particularly high impacts because they activate both the home and the teaching influences and can forge greater coherence between these.

Because of the importance of family and community influences on children, one of the first tranche of first iteration BESs³⁷ commissioned was focussed on family and community influences on children's educational outcomes. This BES has been influential in work with other policy agencies. For example, it has strengthened the case for more priority to issues of child poverty in government policy and for a higher priority for children's untreated hearing loss.

This BES has also stimulated interest in the wider community. For example: the Waitakere City Council in New Zealand has been in touch with the Iterative BES Programme about follow-up. They have called a one day conference on 7 October 2005 focused on the implications of the BES findings and invited the BES writers to speak. The conference is described in the following way by the Council:

*Communities and Educators Working Together:
"Strengthening Relationships"
Fostering a collaborative approach to building and transforming relationships
between communities and educators
Examining models of effective practice locally, nationally and internationally and
looking at how these might be adapted to the Waitakere environment.*

However, there is a lack of infrastructure for R & D in New Zealand in the critical area of educator-community/family linkages and partnerships. While there are examples of substantial and sustained gains for students, and busy teachers and parents, when school-family partnerships are activated effectively (for example, Biddulph, 1983³⁸; Biddulph and Tuck; 1983³⁹; and Biddulph, 1993⁴⁰), many evaluations of government interventions in this area signal gaps in knowledge and effectiveness.

The R & D outcomes-linked collaborative work in this area led by Professor Joyce Epstein⁴¹ at Johns Hopkins University Center on School, Family and Community Partnerships in the U.S (linked to the Harvard Family Research Project) is providing a model that could inform a collaborative national research programme in New Zealand. The Johns Hopkins University Center has established a new research and development initiative called the National Network of Partnership Schools (<http://www.csos.jhu.edu/p2000>). This network ensures an ongoing action research approach to identifying what works in school-home partnerships for specific contexts. The aims of the Center are to provide a research foundation to guide schools, districts, and policymakers to create and support positive, permanent programmes of

partnership, to disseminate information about what works, and to learn from a variety of approaches implemented in diverse schooling environments.

If New Zealand is to optimise linkages between evidence and practice in this area in any sustainable way then there needs to be comparable infrastructure and work carried out here in ways that are appropriate for educators, families and whanau in the New Zealand context. A particular resource in this work will be the substantial body of Māori educational research illuminating linkages between communities, iwi (tribes), families (whanau) and schools (kura and wharekura). Māori educational research was noted to be an area of national strength in the Performance Based Research Funding quality evaluation⁴².

Rationale for the Series of Best Evidence Syntheses

Walter and Davies' (2003)⁴³ have identified '*a strategy of creating evidence in priority areas, with concomitant systematic efforts to accumulate evidence in the form of robust bodies of knowledge* (p. 126) as one of the four widely-agreed underpinnings of any evidence-based practice agenda.

The analysis of the relative impacts of different influences on outcomes has been influential in the selection, prioritising and order of BES topics for the first iteration BESs. At this stage eight criteria have been developed for identifying and prioritising BES topics. These are:

- a) potential impact on a range of desired learner outcomes;
- b) ongoing attention to the interface between education system and family and community influences;
- c) strategic attention to areas of system weakness;
- d) strategic attention to areas of system need;
- e) balance across the system (early childhood, schooling and tertiary including industry training & adult learning);
- f) interlinked attention to strengthening the evidence-base both to explain what works and educational change processes;
- g) methodological viability; and
- h) resource availability and/or potential for capability development.

The first criterion led to an initial cohort of BESs focussed on:

- the influence of families and communities on outcomes for children from birth across early childhood education and schooling⁴⁴,
- quality teaching for diverse learners in early childhood⁴⁵;
- quality teaching for diverse learners in schooling⁴⁶, and
- professional development in early childhood education⁴⁷.

Other synthesis attempts in initial teacher education and professional development for schooling were unsuccessful because of inadequate resourcing, methodological difficulties and the contestation by writers of the outcomes-focus in BES work.

The second cohort of BESs is now in progress focussed on:

- effective pedagogy for diverse learners in mathematics/pāngarau⁴⁸
- effective pedagogy for diverse learners across the social studies, social sciences, tikanga-ā-iwi curricula areas⁴⁹
- educational leadership – schooling⁵⁰
- teacher professional learning and development – schooling⁵¹

The two teaching-focussed BESs span early childhood and schooling and all BESs are required to link to and specifically build on the findings of the families and communities BES. The focus on educational leadership was not initially planned so early in the series, but was commissioned in response to a strong case mounted from the sector and internally within the Ministry of Education.

A four-year programme for future BESs is being formulated using the criteria and has been used within the Ministry of Education to establish agreed priorities for first and subsequent BES iterations. In December 2005 at the annual conference of the New Zealand Association for Research in Education the proposed programme will be released publicly so that there is transparency and potential BES writers are able both to inform priorities and to plan ahead.

The biggest constraint on initiating new BESs arises out of the considerable resources required to mount, resource and sustain the collaborative and national consultation processes involved in a BES development at both the national policy level and across the research institutions and stakeholders involved.

Collaborative Knowledge Building as a Change Strategy

A key proposition in this paper is that the project of bringing together rigorous and useful bodies of evidence about what works in education needs to embed within its approach ways of working that attend to the ‘knowledge utilisation’ challenge as well as the knowledge building challenge. If such ways of working are built into EBPR then the endeavour of itself can be a transformational process that not only constructs a new kind of dialogue and understandings amongst policy workers, practitioners and researchers but also provides the foundation for using the knowledge to make a bigger difference in education.

This means embedding opportunities for dialogue into the knowledge building processes rather than initiating them after a synthesis has been produced. This approach is resource intensive because it is part of a national educational development process of itself. Ginsburg and Gorostiaga (2003)⁵² explain the underlying principle in the series editor’s introduction to an international consideration of the *Limitations and possibilities of dialogue among researchers, policy makers and practitioners*:

Dialogue isn’t necessarily more efficient, but it’s more democratic and, therefore, more effective.

...Our preference is also based on the belief that in the long run dialogue and participation by a wide range of stakeholders produce better and more relevant educational research, policy and practice. ...Certainly, it may be easier – and, in that sense, more efficient – for researchers, policy makers, and practitioners in education to engage in action (or even in praxis) in

isolation of members of the other groups. However, the decisions that are made and the actions that are pursued are likely to be less effective. This is the case not only because the quality of judgements may be lower but also because the activities of one group may detract from or cancel out those of other groups. (p. x)

In the following section of this paper the BES development processes are explained with consideration of the approach to collaborative knowledge building across research, policy and practice as a change strategy.

Linkages between Policy and Educational Researchers/ Teacher Educators

In this section there is consideration of our strategic and evolving approach to BES development as a policy-research collaboration that has the evidence-practice agenda at its centre.

Developing National Guidelines for Best Evidence Synthesis Development

One of the key challenges for EBPR is the contestation of what counts as rigorous evidence amongst researchers. In order to gain the confidence of the educational research community and their engagement in iterative processes of BES development and use, the Ministry of Education drew upon expertise across the country to strengthen the approach and to get a high level of agreement about the methodology to be used.

In 2003 and 2004 the Ministry of Education brought together national reference groups of researchers, methodological advisers, BES writers, policy workers and teacher union representatives to develop formal and agreed *Guidelines for Generating a Best Evidence Synthesis*⁵³. The approach taken was to gain agreement about the purposes which then informed a fit-for-purpose methodology. After each new cohort of BESs is completed the national advisory groups will review and improve the *Guidelines*.

The national advisory groups particularly emphasised the importance of interaction in the processes of BES development. This advice has been operationalised in the *Guidelines* and through the structuring of a series of six contractual milestone reports on progress for each BES development. BES writers are required to provide an update on a draft methodology chapter for each milestone, and to successively provide scoping outlines and partial draft samples through to a whole draft report. The draft is submitted for national and international formative quality assurance three months before the final report is due. This final stage enables the QA to feed into optimising the quality of the final product. Each milestone report is considered by a BES management team that includes cross-Ministry and sector representatives. BES writers also fill-in a quick self-audit against the Guidelines at each of the preliminary milestones that together with the developing draft provides the basis for dialogue, critique and collaboration as the BES develops. This process assists with transparency, capability building and wider ownership of the knowledge building.

The full account of the methodological approach, its underpinnings in a realist philosophy of social science, its rationale for the privileging of outcomes-linked case studies, and the weight given to theoretical coherence in BES can be found in the *Guidelines* at www.minedu.govt.nz/goto/bestevidencesynthesis. The rationale for the

approach, and in particular, for the rejection of the ‘gold standard of randomised controlled trials’ adopted in some other approaches is provided in the OECD paper⁵⁴ prepared for the 2004 Joint OECD US Evidence Based Policy Research in Education Conference.

Fit-for-Purpose Selection of Best Evidence Synthesis Writers

The selection of BES writers is also guided by fit-for-purpose considerations for both knowledge development and use.

First, our approach requires the best evidence synthesis lead writers to be New Zealand educational researchers who have shown national research leadership in the BES area of focus, or demonstrated capability to take on a professional and research leadership role in the field in New Zealand.

Our purpose is to ensure capability development within New Zealand. Strategies are used to access international expertise including international quality assurance but the writers must be local. Some funding is also provided to writers to enable them to publish widely from the BES after publication in order to continue the iterative process of peer scrutiny and critique and to support the national leadership role sought from BES writers.

Second, we aim to embed the iterative BES work across the New Zealand tertiary infrastructure. This differs from an approach that might develop expertise within a national policy centre or located within one specialised external unit focussed on methodological expertise in evidence-based synthesis. Accordingly, we seek to have BES developments situated in, and spread across, Universities, Colleges and Wananga so there is also institutional support for, and ownership of, BES development.

Institutions are asked to demonstrate commitment through contributing to the resourcing of the BES development process, for example, contributing to teaching release time for BES writers and funding writers to attend international conferences. Our rationale is that there is value returned to the institution through the collaborative BES opportunity because it helps to inform their core practice and supports institutions in taking a national leadership role in knowledge building and R & D.

Third, we are seeking BES writers who are also teacher educators (or in the case of the educational leadership BES involved in principal and leadership development and so on). For the BESs to support an embedded R & D approach to teacher education and teaching in New Zealand they need to be used by teacher educators in ongoing and iterative process of both using and strengthening the evidence base. There is a need for New Zealand teacher educators not only to be informed about the work but also to take some ownership of the emerging knowledge. Accordingly, a substantial proportion of the contract funding for a BES development is provided to the BES writers to include teacher educator/researcher colleagues from across New Zealand as advisors to, and beneficiaries of the development process.

This process strengthens the work, builds ownership and has other gains. For example, the process strengthens the kinds of networks and social capital amongst researchers and teacher educators nationally that are conducive to developing enhanced infrastructure for R & D. Our experience shows that the BES development processes can involve writers and their advisers taking the time to read the work of

colleagues that has been so siloed few are aware of the work. This process is one of valuing and acknowledgement that can have substantial rewards not only for the wider processes of knowledge building but also for the individuals involved.

The process also involves risks that need to be managed. For example, in one case there has been advice to BES writers to focus on the teacher educator/researcher audience to the BESs rather than the teacher audience.

Supports for Synthesis Development

For each new BES development, new writers need to engage in the capability development required to generate a BES iteration. This is arguably a weakness of the Iterative BES Programme because we do not have a repository of evidence-based expertise in specific centres. Such weaknesses need addressing but are offset by the strength of the Iterative BES approach contributing to national capability development within and across the teacher education sector. It needs to be acknowledged that the challenge of BES development is an extraordinary call on BES writers and the collaborative processes need to have built into them as much support, scaffolding and respect for the size of the challenge as possible to make the task doable.

We are also seeking to establish a range of information management tools to assist BES writers and others using BES to access research. For example, we are establishing at the New Zealand Council for Educational Research, a national database of education theses, which are currently held independently within universities, often unknown to a wider audience and can only be read under librarian supervision.

The Role of BES as a Research-Policy Link Informing R & D Investment

There are other strategic benefits for the evidence-practice agenda that arise out of this link between policy and research. For example: BES developments provide critical and systematic insight into major gaps and areas of need for R & D investment.

Linkages Between Policy and Teaching?

The lesson we have taken from both the importance of teaching and the risks of ineffective policy responses to the need to strengthen teaching for diverse learners, is to work in partnership with both New Zealand teacher unions in advancing the Iterative Best Evidence Synthesis work. While the decision to work with the teacher unions was a practical way of establishing a broad partnership with New Zealand teachers, there is evidence for there being a link between more intensive teacher union activity and higher student outcomes in the US (Carr Steelman, Powell & Carini, 2000)⁵⁵. The teacher unions have a history of professional leadership in New Zealand particularly in the areas of curriculum and subject associations.

The New Zealand Teachers Council (NZTC), a new professional body for all registered teachers working in early childhood, primary, secondary, tertiary and other teaching situations, was established in 2002. The Iterative BES Programme has also established a partnership with the NZTC and council policy workers including the CEO are also involved in the collaborative approach we are jointly building. The NZTC has been proactive in ensuring that the BESs also inform their work and are assisting to fund the leadership BES development.

Through the partnerships with the teacher unions and the New Zealand Teachers Council, representatives are engaged with:

- the development of requests for proposals;
- selecting the successful tenderer;
- providing advice;
- engaging with an iterative and collaborative process with BES writers through managing the milestones reports;
- participating in national Think Tanks and seminars organised to support BES development;
- contributing to the formative quality assurance of new BESs; and
- continuing advice about approaches to use of BESs.

In New Zealand we are watching with interest the innovative ways in which the UK Centre for Use of Research and Evidence in Education⁵⁶ (associated with EPPI) is engaging policy workers and teacher union representatives in synthesis development processes to optimise the ways in which content and form serve function.

In the case of syntheses focussed on teaching, we seek each BES to be accessible to its multiple audiences; but it is teachers and others closest to the teaching who are the primary audience. The teacher unions have formally asked the Ministry of Education to ensure in all communications about the use of BES that the desire of teachers is to be first afforded time and opportunity to read and discuss the syntheses.

The issue of an evidence-based approach to what works for multiple audiences, and in particular for a teacher audience is arguably where evidence-based knowledge is most impoverished. What form of synthesis is most useful for teachers? Despite the commonly espoused view that simplifying the message will make them more accessible and more useful to teachers, the evidence about educational change does not readily support this view. There is a strong case for the use of research-based vignettes of practice embedded in syntheses, to exemplify theoretical tools that are of use to teachers adapting and using the findings in their own contexts. Kennedy (1997)⁵⁷ reviewed studies of research use by teachers that showed research was more likely to be used conceptually than instrumentally:

'practitioners did not take from research tools that could be directly applied in their classrooms, but instead took ideas: concepts that could, especially when combined with other ideas, help them invent specific responses to local situations.' (p. 7)

We seek from our BES writers, attention to embedded vignettes (not anecdotes but actual data narratives) that explain the broader findings with appropriate attention to the complexities of actual practice. Frequently such vignettes not only bring the findings to life for teachers, but also for policy workers and other researchers. Theoretical tools derived from the research are seen as enabling teachers to use research findings conceptually to inform their own work.

To exemplify the power of the use of evidence-based vignettes within the syntheses we use this example from the work of Christine Rietveld (2002⁵⁸; 1994⁵⁹; 1999⁶⁰) a

New Zealand researcher who has spent hundreds of hours observing the experiences of students with Down Syndrome in schools. Consider first the experiences of six-year-old Mark who has Down Syndrome:

[Mark is in the playground standing and looking around. James comes up to Mark.]

James: Hello, hello, hello. *[James gets very close to Mark's face.]*

[Mark backs off a little.]

Mark: No

[James goes off to a nearby friend in the adventure playground.]

James: Looks at that boy there. He said 'No'. Come and have a look. He goes like this with his tongue.

[James imitates putting his tongue in and out of his mouth. James pokes his tongue out at Mark. Mark walks off a little and watches children playing on the adventure playground. James returns with another two boys as well as the first boy.]

Boys: Hello, hello, hello.

[The boys say hello to him over and over and laugh at him. One of the boys throws his lunch paper at Mark after screwing it up first. Mark looks at the ground and shakes his head. Peter squeals at him and pats his cheeks. The others make growling noises at him then laugh.]

The boys leave for a minute and then return and continue saying 'Hello' to Mark over and over. Mark pokes his tongue out at the boys.]

[a teacher-aide walks by.]

[Interrupted narrative – What should the teacher aide do?]

TA: I hope you boys are being nice.

James: We're just saying 'Hello' to him ...

[The teacher-aide introduces Mark to the boys and suggests that they play with Mark. They ask Mark if he wants to swing. Mark does not respond. The boys leave and Mark stands on the path looking around.]

TA: Come on. *[The teacher-aide is holding out her hand to Mark.]*

We'll find William. *[William is another child with a disability the teacher-aide is there to support.]*

TA: Let's go to the adventure playground.

[Mark follows the teacher aide.]

In another school, Ian, who also has Down Syndrome, is engaged with peers in building a block structure when Alan makes a complaint about him to the teacher.

Alan: Ian! No, Ian.

Brent: *[To Alan]* Tell the teacher.

[Alan tells the teacher]

The teacher arrives at the scene and ...

[Interrupted narrative – What should the teacher do?]

[The teacher arrives at the scene and looks.]

Teacher: *[To Alan]*. If there's a problem, tell Ian what it is. Tell Ian if there's too many cars, it'll *[the structure they have built]* break. Tell him where he can put the cars and blocks.

[Alan and Ian sit down on the mat. Ian picks up a car.]

Alan: *[To Ian]*. In there. In there. *[Alan shows Ian where to put the car.]*

Ian: No. *[Ian says 'No' but does put the car where Alan showed him and drives it around. Brent, Alan and Kate also drive their cars around each on their own part of the block structure.]*

[The children continue to drive their cars around for 2 minutes.]

These examples provide a compelling contrast between educational environments and the consequences for children. Christine Rietveld uses a theoretical tool to help teachers build upon these contrasting examples to improve their own practice. She contrasts the 'personal tragedy' approach to students with disabilities with an educative 'social constructivist' approach to shaping the learning environment. The personal tragedy perspective of the kindly teacher aide compensates for Mark's exclusion from his peer group with age-inappropriate handholding – a compensatory not an educative response. This was a pattern across the practice of many teachers observed in Christine's research. The 'personal tragedy' theoretical tool provides a way of helping educators to identify deficit theorising and its consequences.

The social constructivist approach of Ian's teacher benefits both the peers, who have to learn to problem solve and to communicate, and Ian. Research on peer helping shows evidence of greater achievement benefit accruing to the child who helps than to the peer who is helped if children are taught to provide elaborated explanations (Webb, 1991)⁶¹. This is a good example of the kinds of surprise findings outcomes-linked evidence has provided about working effectively with diverse learners at the same time.

Like so many studies from the 'Quality Teaching for Diverse Students in Schooling BES'^{62,63} the research focussing on Ian's teacher exemplifies the ways in which effective pedagogy simultaneously addresses a range of outcomes for diverse students at the same time – achievement, social skills, cultural identity and potential 'behaviour problems'. The examples illustrate also teacher agency in the ways students learn and practice (or not) values such as respect as part of their moment by moment experience of schooling. The responses to Mark and Ian demonstrate compellingly how 'quality teaching for diverse students' is not about adding more but about transforming business-as-usual. Everybody benefits, including the teacher, because her actions in strengthening the peer learning culture, lessen her stress.

The partnership with teacher unions is greatly strengthening the Iterative BES Programme. The programme has also been instrumental in empowering teachers to reclaim the research on educational practice as their own. As teacher union representatives were talking to researchers within the context of a national Think Tank for BES development, it was interesting to note the use of the term 'our BESs'.

Recently the teacher unions have taken a pro-active lead in strengthening the policy-research-practice dialogue about evidence. In May 2005, the primary (NZEI) and secondary (PPTA) teacher unions organised a cross-national forum with the

Australian Curriculum Studies Association entitled *Quality teachers: Quality teaching –Creating a new agenda for action by practitioners, researchers and policy makers*. They invited Keynote addresses (including one focussed on BES) and 100 or so policy, teacher and research leaders from Australia and New Zealand to engage in the forum. The secondary teachers' union has initiated and organised a national professional conference for April 2006: '*Quality Teaching: Leading the Way*'.

A Strategic and Evidence-Based Approach to the Use of BES

The published BESs have been used widely by individual teachers, schools and teacher educators. While some teachers and principals are achieving quite remarkable results with the BES it is also evident that the BESs themselves can be used in ways that are unhelpful for practice. For examples, New Zealand teachers have been presented with death-by-bullet-point presentations about BES from experts that have not been helpful.

An EBPR response to the importance of teaching is to afford as much weight to the significance of outcomes-linked evidence about educational change processes and sustainability, as to the evidence about what works for students. This means addressing a substantial gap in the educational research literature. For example, many commentators have now noted that despite the massive educational research literature on teacher professional development, there is very little that attends to effectiveness as defined by positive outcomes for the students of the teachers who received the PD.

A notable exception is the June 2005 EPPI Review focussed on '*The impact of collaborative continuing professional development (CPD) on classroom teaching and learning*'.⁶⁴ This review provides a useful indication of the importance of external expertise associated with school-based professional development but notes the risks of school rejection of PD when they have experienced poor specialist support. The reviewers recommended that:

'Policy-makers are urged to consider the nature of specialist input needed, the potential sources of such expertise and the ways in which access can be facilitated and sustained' (p. 12)

As the new cohort of BESs is completed we are seeking to bring together BES writers and our national advisors to explore the possibilities for evidence-based approaches to BES use. We are seeking advice on the possibilities for setting up nationally networked postgraduate courses for teachers offered across tertiary teacher education institutions. One possibility is that such development may be linked to progress in getting Centres of Research Excellence in Teaching and Teacher Education.

The goal for the postgraduate courses would be for the pedagogy and practice of the courses to be consistent with the findings from the forthcoming *Teacher Professional Learning and Development BES*. Emerging evidence suggests that the courses might be school-based, or teacher-education based (for advisers to schools or mentors within schools), use a collaborative action research approach, provide ongoing opportunities for collaboration and networking amongst teachers, enable observation and reflection linked to student learning data and lead to changes in practice which become embedded. Outstanding examples of teacher or teacher educator engagement in R & D through such courses, and the findings from the evaluations of the impact of such courses on the students of the teacher participants would also feed back into future BES iterations.

Linkages between Policy and Educational Leaders

There have been instances of principals taking a pro-active role in working with the BESs as a tool for school-wide development. In one case a school achieved remarkable lifts in student enjoyment of learning, associated with gains in student achievement across a wide range of curricula areas. The principal reports⁶⁵ leading a school-wide approach, with time to read and discuss the BES and teachers choosing and focussing on a particular characteristic of quality teaching each term. Teachers work within subject departments to embed their focus in planning (for example, increasing the use of non-linguistic representations in science) and progress is evaluated against unit pre- and post-testing and a regular end-of-term survey of student enjoyment of learning.

However, from a systemic viewpoint, a weakness in the approach taken in the Iterative Best Evidence Synthesis Programme has been the lower priority given to communicating more widely with school principals' associations and federations in the early stages of the programme. The rationale has been that given the limited resources for the programme it was more strategic to build wider understanding, engagement and capability around BES amongst teacher educators and with the teacher unions as a first step. It was envisaged that having a wider infrastructure of understanding and support in place would be critical before engaging more deeply, widely and formally with principals.

Also, early engagement with new principals signalled concern about the focus on teaching and pedagogical leadership in BES. Principals who saw their role within a national school-based management model as properly focussed on managerial leadership rather than providing or facilitating pedagogical leadership expressed dismay. A more extreme reaction has been a message to the effect: *'I have spent all this time getting out of the classroom. I am a manager now and I am working long hours. Don't give me this stuff about teaching and pedagogical leadership'*.

This is not to say that there has been no engagement with principals. There has been centralised consultation, teacher unions have nominated principal representatives to work in advisory roles on BES developments, and pro-active principals have developed school-wide PD Programmes using BES and linked to learner outcomes. Principals have reported delight in the role of BESs in influencing Boards of Trustees to afford greater priority to expenditure on supports for teaching. The president of the Secondary Principals' Association of New Zealand initiated a collaboration on an article⁶⁶ focussed on how principals might lead evidence-based ways of using the BESs.

But such consultation has not been sufficient. In retrospect, this weakness has been a failure to attend to our own health-of-the-system framework. In an education system where school-based management is the fundamental governance model, partnership work and extensive dialogue with principals needs to be up-front.

The recent formal involvement of the principals' associations, the School Trustees' Association and representatives of deputy, assistant principals, heads of departments and so on, in the new educational leadership BES development has provided a focus for an evidence-based consideration of how the partnership work might fruitfully grow. Principal association representatives on this recent BES development have been proactive in expanding the opportunities for dialogue nationally.

The findings of an evaluation⁶⁷ of a major New Zealand improvement initiative provided a timely reminder that keeping student outcomes as the focus of educational practice is not only important for the students, but can also be helpful in challenging approaches that inappropriately burden schools with poorly devised interventions:

If the Ministry of Education communicates either through its words or deeds that the task is to fill empty schools, to win community confidence, to improve relationships, to increase parent participation or to empower local groups, it risks doing so in ways that do not also improve student achievement. (p. 134)

The BES message that the evidence base and evidence-based approaches do not mean doing more but rather doing business-as-usual more effectively with benefits for diverse learners and their teachers, is a compelling one for principals. A growing cadre of principals who have had direct experience of such benefits through leading or facilitating work that is featured in BES or seeing gains from school-wide PD using BES is building school leadership confidence in the value of a strengthened evidence base.

Linkages with/in Policy Work

A consideration of the strengths and weaknesses of the policy dimensions of this collaborative knowledge building work should first acknowledge that having the leadership of a collaborative knowledge building programme situated within a national policy agency is unusual. It is unusual because the focus of the policy advice arising from the programme is on medium-term and long-term strategy across election cycles. The possibility to lead such work within a central policy environment exists because the New Zealand Ministry of Education has, as do other New Zealand policy agencies such as the Treasury and the Ministry for Economic Development, a Medium Term Strategy Policy Division.

The discourse surrounding linkages amongst policy, research and practice frequently refers to the ‘policy’ element as ‘policy makers’. In this paper I have used the generic term ‘policy workers’ to denote the heterogeneity of policy roles, and in particular the distinction between those who give or help to ‘implement’ policy advice and those who are democratically elected to make policy decisions. Perhaps the most substantial gap in the available evidence-base is that which explains the links between policy decisions, activity and outcomes for diverse learners, or explains the communication, organisational learning and other processes that mediate policy decisions and activities.

Nutley, Walter and Davies’ (2003)⁶⁸ ‘*Framework for Understanding-the Evidence-into-Practice Agenda*’ helpfully suggests six research fields that may advance knowledge about ‘research utilisation’. These are research on: diffusion of innovations, institutional theory; managing change in institutions, knowledge management, individual learning and organisational learning. Nutley et al. signal the importance of the distinction between adaptive learning and generative learning in organisations:

‘Adaptive learning routines can be thought of as those mechanisms that help organisations to follow pre-set pathways. Generative learning, in contrast, involves forging new paths. Both sorts of learning are said to be essential

for organisational fitness but by far the most common are those associated with adaptive learning.’ (p. 136)

The Iterative Best Evidence Synthesis Programme has been influential within the New Zealand Ministry of Education. For example, in influencing the corporate Statement of Intent⁶⁹ and in informing the development of a five-year ‘Schooling Strategy’⁷⁰ agreed by stakeholder and sector groups which has evidence-based development as a central part of the strategy. However, to avoid pitfalls such as misuse of evidence, failures of empty rhetoric, and magical notions of change undermining the potential of evidence-based approaches, there needs to be a significant strengthening of knowledge in this area for the New Zealand context. The need for strengthening the kind of evidence-base outlined above and the need to enhance the potential for generative learning are significant challenges.

We now have funding for ongoing formative evaluation of the Iterative BES Programme that will systematically inform our thinking in this area. In this section of the paper I briefly illustrate tensions, dilemmas and possibilities that have arisen out of this work to date. For example, when the first BESs were publicly released, this occurred after six months of internal distribution of the documents to managers within the Ministry of Education. However, our efforts to get deep engagement with the outcomes-linked evidence were only partially successful and would not rate highly against available evidence regarding effective organisational learning.

In summarising the findings of the analysis of multi-level modelling studies of school and between teacher/class effects, we framed teaching as the ‘key system influence’ (compared with school-level effects). However, the translation of evidence-based findings into easily communicable ideas by speechwriters can rapidly transpose evidence-based messages into claims that are clearly wrong. For example, the false claim that ‘*quality teaching is the key influence on learner outcomes*’. A rapid response to this false claim surfacing came from the leadership of both teacher unions. In an editorial⁷¹ to primary and early childhood teacher union membership the union president urged teachers to go to the Ministry of Education’s best evidence synthesis website to check out the evidence, concluding:

‘Our members are committed to continuous improvement and enhancement of quality teaching but, as the BESs, confirm, it is when the myriad of influences come into focus, and are addressed, holistically, that significant progress is made.’

This example suggests that the programme is going some way to achieving one of its purposes:

Best evidence synthesis iterations are intended to contribute to an ongoing evidence-based discourse amongst policy makers, educators, researchers, teacher educators, and educational leaders, that will in-turn inform dialogue with learners and the wider community about what works and what can impact positively on learners.

(Guidelines for Generating a Best Evidence Synthesis Iteration, Purpose viii, p. 6, www.minedu.govt.nz/goto/bestevidencesynthesis)

There are emerging outcomes of Te Kotahitanga, a New Zealand secondary school improvement project developed by leading Māori researchers, professional developers, community elders and teachers that suggest a powerful change model has been developed. Professor Emeritus Christine Sleeter, currently Vice-President of Division K (Teaching and Teacher Education) for the American Educational Research Association recently visited the schools and reviewed the programme. She concluded:

The project is exceptionally well conceived, very comprehensive, very consistent with the literature on culturally responsive teaching and professional development, and backed by a sound research program. As you know, I've worked on these same issues for about twenty-five years, as both a higher education faculty member working with pre-service and practicing teachers, and as a researcher/ theorizer. I see more potential to make significant and sustained improvements in schools for students from historically underserved communities in this project than in any other project that I have had contact with. (March 28, 2005)

Deepening evidence-based attention to issues of scaling and sustainability is particularly critical given the vexed international policy history of attempts to 'scale up' school improvement. Ministry colleagues overseeing the contract for Te Kotahitanga over the past two years have proactively engaged the project leaders in a reciprocal process of informing and being informed by work in the Iterative Best Evidence Synthesis Programme. For example, they have proactively used Coburn's (2003) landmark overview of research *Rethinking scale: Moving beyond numbers to deep and lasting change*⁷² and her framework which has been used within the Ministry and in engagements with stakeholders. Coburn notes that for the US context:

'the history of public schooling is replete with evidence of reforms that barely scratched the surface of schooling, failing to reach into the classroom to influence instruction'(p. 4)

Coburn's analysis of what works identifies depth, sustainability, spread and shift in reform ownership as critical and inter-related dimensions for systemic and sustainable development.

Professor Russell Bishop, who co-leads the Te Kotahitanga programme has been granted funding by a New Zealand Centre of Research Excellence, Nga Pae o te Maramatanga, to provide an analysis and interrogation of Te Kotahitanga in the light of the study findings and the implications of the wider evidence about scaling and sustainability. This iterative process is, in turn, now informing the development of the new teacher professional learning and development BES.

These examples highlight the dilemmas and possibilities of working collaboratively across research, policy and practice to strengthen the evidence base and the R & D capability of an education system and its communities.

In conclusion, at this stage in the Iterative BES Programme, the core strategies for making the kind of progress that can lead to deep, sustainable and systemic change and improvement appear to be:

- an incontrovertible focus on evidence-based approaches that attend to a range of desired outcomes for learners;
- attention to issues of development and sustainability at the centre of this work and in the processes of the work;
- a health-of-the-system approach;
- an embedded responsiveness to diversity framework;
- an ongoing collaborative approach across policy, research and practice;
- a conception of evidence-based that extends both to the processes of change as well as the focus of change;
- transparency; and
- an iterative process that uses weaknesses as information to be used for improvement.

The iterative approach is not only critical to the processes used in knowledge building and use. As contexts change, and new evidence emerges, our understanding of evidence about what works is, and should be, continually changing and developing. Through embedding a sense of ‘knowledge building’ as iteration BES is able to act as a catalyst to R & D. BES deeply values what the past work of others can offer to educational development and explains and guides how we might make a bigger and cumulative, positive difference for all learners now and in the future.

Feedback and critique of this paper is welcomed at adrienne.altonlee@minedu.govt.nz

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- ¹ Although the terms evidence-based policy research [EBPR] and evidence-based practice [EBP] are used to mean quite distinctive approaches in the literature, in this paper I explain a perspective where there is a continua between the two areas.
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 - ³ OECD (2001). *Knowledge and Skills for Life: First Results from PISA 2000*. OECD: Paris.
 - ⁴ OECD (2004). *Learning for Tomorrow's World: First Results from PISA 2003*. Paris: OECD.
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