



# Barriers and Enablers to Evidence-Based Practices

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## ABSTRACT

The importance of educational practices based on evidence is well-supported in the literature, however barriers to their implementation in classrooms still exist. This paper examines the phenomenon of evidence-based practice in education highlighting enablers and barriers to their implementation with particular reference to RTLB practice.

## Research Paper

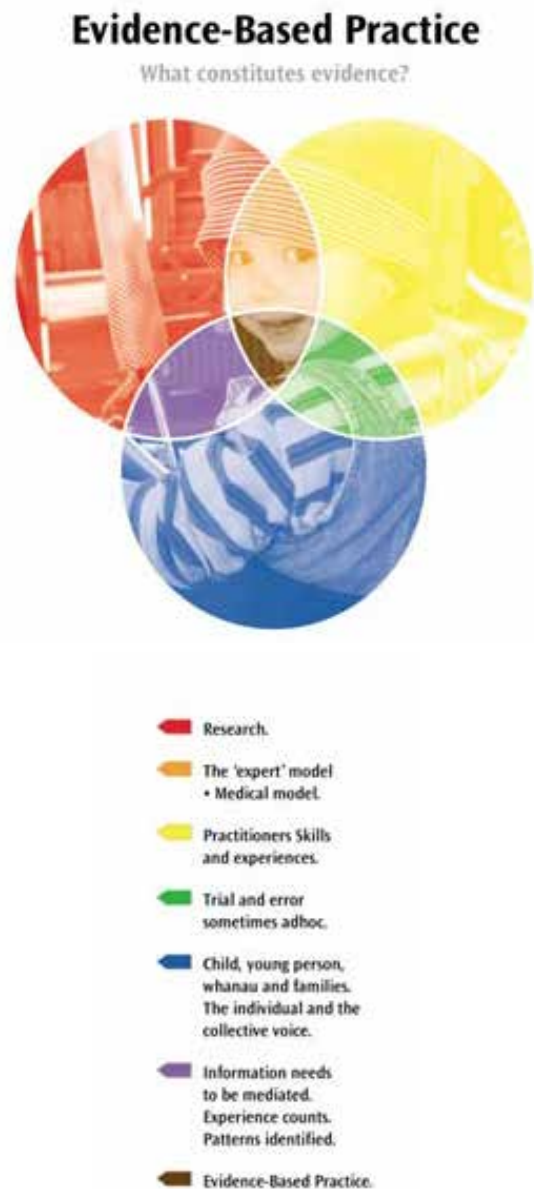
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## INTRODUCTION

The term evidence-based practice (EBP) has become a common catch phrase over the last ten years, and reference to it can be found across a range of disciplines. Education has not been immune from this, and in New Zealand, the Ministry of Education (MOE) refer to it in a number of policy and information documents (New Zealand Curriculum, MOE, 2007); and the Resource Teacher: Learning and Behaviour (RTLB) Toolkit (MOE, 2012). However, while the notion of evidence-based practice is becoming increasingly accepted as a necessary focus of teacher work, there is confusion and contradiction regarding its meaning. One of the reasons for this is the range of confusing terminology associated with EBP, including terms such as 'best practice', 'best evidence', and 'research-based', all of which have been used synonymously with EBP, despite differences in their meaning (Hornby, Gable & Evans, 2013).

Another of the difficulties is the differing paradigms from which evidence-based practice is interpreted. Some define it in terms of controlled and randomised studies: for example, "An evidence-based practice can be defined as an instructional strategy, intervention or teaching programme that has resulted in consistent positive results when experimentally tested" (Marder & Fraser, 2012, npg). Contrasted to this is a widely-used model of evidence-based practice as described by the Ministry of Education (2012) and later by Macfarlane (2011). Here, a three-component model

is used to show evidence-based practice as situated in the intersection of (i) research evidence, (ii) practitioner evidence and (iii) evidence from the child/young person and their family/whānau.



(MOE, 2012)

While it is beyond the scope of this article to provide any resolution to the confusion regarding definitions and meanings, the relevance and importance of evidence-based practice to education cannot be overstated. This is because evidence-based practices in education provide teachers and other educators with guidance about what works so as to enhance educational outcomes for all learners.

Despite a growing awareness of the importance of evidence-based practice in education there is a reported gap between what has been found by research to be effective and what educators use and practice in their daily work (Mitchell, 2008). Therefore, it is important to examine those enablers to evidence-based practice with the aim of increasing the relevance and use of such practices in schools. RTLB have a significant role to play in this task as a major focus of their work is increasing teacher/school capability and capacity. In this regard, assisting teachers to be informed practitioners and ensure that their practice is based on best-evidence is extremely important.

### **ENABLERS TO IMPLEMENTING EVIDENCE-BASED PRACTICES**

As a former education advisor with School Support Services, I have been a part of professional learning and development projects that appear to align with what Odom (2009) calls "Enlightened Professional Development" (p. 58). Both the *Assess to Learn* Project (AtoL) and the *Secondary Literacy* Project have had an evidence base, were nationally implemented in schools that requested them and included a review of school systems as well as classroom practices, were facilitated by trained advisors, and had, as an integral aspect, on-going coaching and support of teachers. Over a two to three year contract in each school and thousands of visits to classrooms, I saw no two teachers who implemented the key principles of each contract in exactly the same way. What I did see were teachers who adapted new knowledge and skills to what they already knew in a way they considered most appropriate to their context. The most dynamic and on-going changes occurred where the teachers involved engaged in collaborative inquiry with colleagues around data. As a consequence, they developed accountability to each other as they came to accept collective responsibility for all the students they taught.

### **Accessibility of EBP**

If evidence-based practices are to be successfully implemented in schools, they need to be accessible to educators. In other words, consideration needs to be given to the way in which findings are presented.

They need to be communicated in brief summaries showing: how findings fit into the wider context, with suggestions for action; using straightforward language without jargon, light on both referencing and statistics; having examples, illustrations, anecdotes and analogies that teachers can relate to their own experiences, and providing practical decision-making guidance (Nelson, Leffler & Hansen, 2009). Additionally, research findings should be disseminated in a manner that is usable to education settings and can be applied and transferred (Nutley, Walter & Davies, 2003). Nutley et al. (2003) go on to suggest that successful implementation will require the translation or adaptation of the findings to the practice context of the target group, enabling teachers to take ownership of the process and to put their own stamp on implementation.

The role of the RTLB in this dissemination process is often that of a 'guide-on-the-side', someone who streamlines the academic language into more practical terminology that the teacher is able to efficiently integrate with their current knowledge, skills and experience. Through collaborative modelling and dialogue, the RTLB supports the teacher to develop concrete understandings of abstract ideas.

### **Management Approaches**

Walker (2004) discusses several school-wide approaches to behaviour management that have been successfully implemented in schools. From his analysis of these successes, Walker suggests that where developers have paid careful attention to addressing known barriers to implementation, this has resulted in acceptance and adoption of these approaches by schools. From this perspective, therefore, enablers might include: consideration of the characteristics of each school; readiness of the school and teachers for the programme; the presence of advocates or champions of the programme within the school; philosophical support; alignment of key features of the programme and school routines and systems, and robust staff participation. He goes on to theorise that these characteristics are likely to be embedded within the school's culture, and where they are lacking, might be difficult to change. Cook and Odom (2013) highlight the importance of external systems such as administrative, financial and organisational support for teachers; Harn, Parisi and Stoolmiller (2013) assert that any intervention will be "highly contextually dependent" (p. 181) with multidimensional layers, all of which must be taken into consideration. ACT Department of Education and Training (2007) supports this view, describing EBP as operating at two levels which interact with

each other. The first level focuses on the teacher and classroom; the second level encompasses the wider ecology of the school and community.

My experience as an advisor, certainly supports this way of thinking. Before accepting a school onto a contract we had to take them through a rigorous process to determine readiness. This process included all of the enablers cited above, as well as sustainability of change (Forman, Olin, Hoagwood, Crowe & Saka, 2009), and had grown out of years of experience of working with schools who lacked some or all of these, resulting in little change in teaching practices. As an RTLB I don't have the option of choosing who I might work with, or to consider their level of readiness, or the levels of support inherent within the school. This means that I am often working in an environment in which there might be more barriers to implementing EBP than there are enablers and must use my professional wisdom to carefully scaffold a learning pathway with teachers, at the same time undertaking a meticulous inquiry process around my own practice to ensure best professional learning and development practice is maintained.

### Identification and selection of EBPs

Although empowering teachers to identify EBPs could be seen as an enabler to them implementing EBPs (Hornby et al., 2013), barriers such as teacher mistrust of research and time restraints suggest that the RTLB could have a key role as a "purveyor" (Odom, Cox & Brock, 2013) or mediator between EBPs and the teacher. RTLB could select EBPs that might be appropriate for any one school/teacher and student/s and present a range of options to the school/teacher and whanau for consideration, helping them to navigate research literature (Hornby et al., 2013). The RTLB might guide the selection of an appropriate EBP based on their knowledge of the teachers' current practice and their knowledge of the student/s. They could provide practical assistance with implementation (Hornby et al., 2013), and could also be available to support teachers to monitor student progress as a measure of the effectiveness of the intervention (Digennaro Reed & Reed, 2009) and to adapt or discard the EBP based on that data (Cook, Tankersley & Harjusola-Webb, 2008). In this way, RTLB could provide critical support in enabling teachers to identify, select and implement EBP.

### Cost Effectiveness

It appears that decisions made by teachers and schools as to whether they will adopt an EBP are likely to be strongly influenced by both programme- and cost-effectiveness and they are more likely to consider favourably a programme that has proven

effectiveness in relationship to the expenditure of time, effort and required resources (Walker, 2004). Considerations such as personnel required for implementation, inclusion or withdrawal from the classroom, professional development required, and the ways existing programmes might need adjustment (International Reading Association, 2002), will all influence how favourably a school might view an EBP. Attractiveness to teachers and schools will also be influenced by the characteristics of the EBP and the resources that it either provides or which are required. For example, does it provide specific and systematic instruction; flexibility for use with diverse learners; high quality materials that can be used across different ability levels, topics and cultures?

As an RTLB, I would see an important aspect of my professional judgement would be to assess EBP in terms of cost-effectiveness and how attractive it might be for teachers, and look for a 'best-fit' between the time and resourcing a school is willing to commit (Forman et al., 2009), and any EBP that I might recommend.

### Professional Learning and Development

Hornby et al. (2013) identifies effective professional learning and development (PLD) as a significant enabler for the implementation of EBPs. Timperley, Wilson, Barrar and Fung (2007) suggest that professional learning which makes a substantive impact on student outcomes involves external expertise, "requires teachers to engage with new knowledge," (p. xv) and its implications for their practice provides multiple opportunities to learn through a range of activities, and assists them to integrate what they have learned into new teaching and learning practices. Their findings also identified that teachers need an extended period of time to achieve this within a professional community that provided both the support and challenge needed to make changes that improved student outcomes. This view has considerable support: Odom (2009) stresses the importance of the social dynamics of professional teams; Meline and Paradiso (2003) endorse the connection between theory and practice; William (2002) and Hornby et al. (2013) believe that the conceptual knowledge of teachers is built up through dialogue within a community of practice; whilst Klingner, Ahwee, Pilonieta and Menendez (2003) and Fixsen, Naoom, Blase, Friedman and Wallace (2005) acknowledge that long-term support is necessary if teachers are to achieve both understanding and successful implementation of EBPs. However, Timperley et al. (2007) maintain that these conditions are not sufficient in themselves to ensure successful student outcomes, and suggest that as well,

teachers need both a rationale to participate and an acknowledgement that their current practices were not optimising student learning and achievement, a view supported by Opfer, Pedder and Lavicza (2011) and Spillane, Reiser and Reimer (2002). These findings are consistent with adult learning theory. Knowles (1980, cited in Harper & Ross, 2011) identifies that adults need to have a reason for learning something, that their own experience should provide the basis of learning activities, that they need to be involved in creating their own learning pathways, and will be most interested in things that are of immediate relevance to them.

Closely aligned to understanding effective PLD is the debate around 'fidelity' or 'innovation' in implementation of EBPs. There seems to be a general belief that whilst an EBP will have some components that will be critical to successful implementation (Harn et al., 2013), teachers should be encouraged to use their professional wisdom and experience to 'tinker' (Nutley et al., 2003), 'innovate' (Wiliam, 2002), or 'adapt' (Cook et al., 2008) an EBP so that it best meets the needs of the learner, the instructional preferences of the teacher, and the educational context (Cook, et al., 2008), allowing 'knowledge to evolve' (Nutley et al., 2003). Wiliam (2002) goes so far as to suggest that the role of the researcher should be seen as one of "highlighting profitable directions in which [teachers] might develop their practice" (p.12), rather than stifling innovation by prescribing activities.

If I, as an RTLB, am to be the 'purveyor' (Odom et al., 2013) or external expert that facilitates the PLD needed to implement EBPs, I would have to adopt a role that does not fit neatly within the current guidelines for RTLB work (Ministry of Education, 2012). This role would include becoming a "change agent who [is] expert at identifying and addressing obstacles to implementation" (Cook & Odom, 2013, p. 140), sharing details of the EBP, resources needed and how well it matches the need (Odom et al., 2013). As an expert, I would need to provide specific and focused feedback to the teacher, be easily accessible, and provide assistance with any practical or logistical problems that might arise throughout the implementation (Gersten & Dimino, 2002). Given the expectation that RTLB have a rapid turnover of cases, this is unlikely to happen to the extent needed to maximise support. Consequently, I would need to adapt and innovate around what I know are best practices. This might look like the following:

1. Identify the need - for a teacher to request RTLB support, suggests dissatisfaction with their practice (Spillane et al., 2002) and a readiness to consider change.

2. Facilitate the establishment of a community of practice (Hornby et al., 2013).
3. Model processes for the identification and selection of EBP that might suit the teachers, students and educational environment (Hornby et al., 2013).
4. Critically evaluate EBPs for best fit (Odom et al., 2013).
5. Undertake PLD, using simple, succinct messages, narrative stories and practitioner examples (Cook, Cook & Landrum, 2013).
6. Provide manageable strategies and resources that fit the practical realities of the classroom and which preferably benefit all students.
7. Support the teacher to experience success and see improvements in students' learning and behaviour (Gersten & Dimino, 2002).
8. Provide on-going coaching to lift teacher capability based on professional judgement and student need (Marzotti, Rowe & Test, 2013), and that allows for innovation and adaptation (Cook et al., 2008).
9. Support the teacher to evaluate the programme through collection and analysis of appropriate data (Cook & Odom, 2013), and adapt, continue or discard the EBP.

It appears therefore, that successful implementation of EBP, is dependent on a multi-layered, problem-solving process, that must explore the delicate balance between research (*tika*), the practitioner (*pono*) and the student and family (*aroha*).

### Barriers to Implementing Evidence-Based Practices

Many of the barriers that have been shown to stand in the way of effective implementation of EBP can be traced to a "technological model of professional action" (Biesta, 2007, p. 4), which is based on the belief of cause and effect. In other words, a teacher has only to undertake certain interventions in a specific way, and a predetermined result will eventuate. However, if we have the student at the centre of our thinking and a clear understanding of the learning that we want the student to achieve, then we will view interventions "as opportunities for students to respond to [...] and to make sense of [...] and to learn something from" (Biesta, 2007, p. 4). Through this lens, the use of EBP (*tika*) becomes a tool in our *kete* (toolkit) as we engage in a problem-solving process with the teacher (*pono*), the student and *whanau* (*aroha*), to consider what processes are most likely to achieve our agreed goals within a specific context.

## Mistrust of Research

Traditionally, some teachers have tended to mistrust research preferring to rely on their own experiences or trusted colleagues for what and how to teach (Cook & Cook, 2011; Hornby et al., 2013). There are a number of reasons for this mistrust: lack of appreciation of the connection between research and effective classroom practice (Meline & Paradiso, 2003; Nelson et al., 2009; Walker, 2004), and the need to be convinced that EBPs will have a positive impact on student achievement (Hornby, 2013). They may also feel that an EBP is a passing fad, based on manipulated data not relevant to their context (Forman et al., 2009). As well, the proliferation of commercial training and products make it difficult for teachers to differentiate between good and bad information (Justice & Fey, 2004), resulting in time, effort and resourcing going into programmes that don't work. If an EBP does not adequately incorporate teachers' points-of-view and the realities of teachers and classrooms, or is seen as ignoring professional wisdom and limiting their instructional freedom, then teachers may be unlikely to choose to implement them (Cook et al., 2008).

## Ineffective Professional learning

Ineffective professional development processes are considered to be a major barrier to the uptake of EBPs by teachers (Hornby et al., 2013). One-day workshops have been shown to be insufficient to enhance an existing teacher's practice (Gersten & Dimino, 2002). Additionally, misconceptions and confused ideas can arise when teachers are taught theories behind interventions without a clear understanding of the actual processes for classroom application (Koutselini, 2008). Furthermore, other factors can either support or undermine a teacher's attempts to implement practices learned in PLD sessions, with beliefs, time and type of training considered to be the most frequent and problematic barriers that prevented teacher uptake of EBPs. Other barriers include: insufficient opportunities for on-going learning, and contextual factors such as school organisation, policies, and a teacher's day-to-day responsibilities. Time was considered highly problematic, with teachers having insufficient time to meet and plan with others and to develop and implement supports (Bambara, Goh, Kern & Caskie, 2012).

Opfer et al., (2011) believe that teacher professional learning will only become more effective when we have a clear understanding of the learning dynamics between an individual teacher and their school, and the way in which this interaction might enhance or constrain professional learning. RTLB will need to

take careful consideration of these factors in each case they have if they are to effectively support teachers to adopt EBPs.

## Traditional teaching practices

Teachers' attitudes, beliefs and feelings of self-efficacy can influence the persistence with which they will attempt new practices and problem-solve their way through any difficulties in implementing new practices (Klingner et al., 2003). It may not be until they are faced with explicit data showing that their students are not achieving as well as expected that teachers will try something different. Simply providing information and/or training, although the two most commonly-used methods of dissemination of EBPs, have been found to be ineffective in changing teacher practice (Fixsen et al., 2005). This has implications for the role of the RTLB particularly in relation to professional learning and development of teachers and in supporting them to adopt a "teaching-as inquiry" (Ministry of Education, 2007, p. 35) approach to the use of an EBP.

## Environmental Factors

The environment within which a teacher works can introduce a range of barriers that will impact on their ability to implement programme changes in the form of EBPs. These barriers may relate to the characteristics of a school, including its routines and systems, the size of classes, resourcing, and senior leadership support. It might also include how well the key features of a programme fit within the current teaching and learning context, and the philosophy of the school. The absence of a key person to champion or advocate for the programme is another barrier to implementation (Bambara et al., 2012; Klingner, Ahwee, Pilonieta & Menendez, 2003; Nelson et al., 2009; Spillane et al., 2002; Walker, 2004).

Each of these environmental factors should be taken into consideration before an EBP is introduced to a school, whether to a single teacher, a group of teachers or a whole school intervention. Unless there is coherence between the practice and school systems, in my experience, the intervention will falter as it becomes easier for the teacher to go back to what works within the school's wider environment. This would suggest that a key factor in successful implementation must be a thorough exploration by the RTLB, in consultation with key school personnel, of the ecological factors within which the EBP will be introduced, and a best-fit sought. This must include teacher/student/whanau/community consultation, particularly with individual interventions (Bambara et al., 2012).

## Teacher Beliefs

The beliefs, experiences and practices that a teacher brings to professional learning can also pose a barrier to implementing EBPs. A teacher might be in an environment that provides optimum conditions and support in terms of class size, time allowance, resourcing and administration leadership, as well as supportive colleagues and families, but teacher-readiness, in terms of their experiences and prior knowledge, may result in an unwillingness to consider new practices or may mean that they are unable to “interpret and implement the reform in ways consistent with the designers’ intent” (Spillane et al., 2002, p. 393).

This highlights for me, that when attempting to introduce new practices to teachers, it is essential that I have a clear understanding of the teacher’s level of learning in relation to the new practice, and co-construct the learning pathway in such a way that it builds on their current knowledge, strengths and understanding. Ideally they should also be given multiple opportunities to consolidate new learning before taking them to the next step. Assessment for learning is just as relevant for adult learners as it is for children and young people. My message to myself: *Do your homework, assess the readiness, willingness and capability of the teacher and only then consider what is the key learning with which to start – what will have the greatest impact for the student/class/teacher?*

Despite these possible barriers, there is much that RTLB can do to help facilitate the use of EBP in schools. An important consideration is to ensure that any suggested interventions are appropriate to the strengths, knowledge and skills of the teacher, the student/whanau and the context. In this way, the use of models such as the three-component model, where evidence-based practice as situated in the intersection of (i) research evidence, (ii) practitioner evidence and (iii) evidence from the child/young person and their family/whanau, may be seen as an important source of what works and what doesn’t.

## The Nature of Research

Studies on research itself has highlighted the challenges inherent in the nature of research when considering ways to enhance the use of evidence in practice (Nelson et al., 2009). The apparent dichotomy between the controlled environment in which some research takes place and the reality of professional practice which relies on “multiple values, tacit judgement, local knowledge, and skill” (Hammersley, 2001, p. 3), leaves many practitioners sceptical of the relevance of EBP to them in their

classrooms (Nelson et al., 2009). Nelson et. al., (2009) found research to lack relevance, to be complex and contradictory, to be inaccessible and untimely, to be subject to both political and marketing bias, to be long - often with a focus on detail, written in language full of jargon and statistics, and published in journals teachers do not read.

In my experience as both an education advisor with School Support Services and an RTLB, I have found that teachers require a ‘purveyor’ (Cook & Cook, 2011) in the sense of a person to promote an idea or view to support them through the process of attempting to transform research into practice. As an RTLB I am unlikely to promote a practice that has not been transformed into a framework that can be easily interpreted in a practical sense (Hammersley, 2001), and which has a generalisability into various contexts. This highlights a tension for both schools and RTLB, in that such a framework can often only be accessed through the purchase of a ‘programme’ or a ‘consultant’, which immediately raises concerns of validity versus financial gain.

Nutley et al., (2003) make the point that even when good-quality information that is both reliable and relevant is available, replication is more likely to occur as an application of generic principles rather than recommended practices, as teachers adapt new knowledge and practices to the specific context of their teaching, their students and their learning environment. They cite Ekblom (2001) who suggests that replication is one end of a continuum and innovation is at the other, and if we demand replication then we are likely to stifle innovation. It is difficult therefore to know whether replication of research might be a barrier or an enabler of EBP. Certainly I have yet to find a teacher who has implemented practices that I have recommended in exactly the way I have suggested. Rather, they adapt them to their own strengths or to their students’ needs, or discard them altogether when, in their professional judgement, they are not a ‘good’ fit. For me, this is *pono* and *aroha* in practice, and provides a balance for the claims of *tika*, or could perhaps be viewed as “an experiment of sorts in which special educators must validate [the] effectiveness of [an EBP] for each individual child” (Fixsen et. al., 2005, p. 138). This said, perhaps we need to view EBPs as “efficacious practices shown to work under ideal conditions” (Smith, Schmidt, Edelen-Smith & Cook, 2013) and support teachers to translate them into “effective practices that work in typical conditions”, (Smith et al., 2013, pg. 147) whilst at all times being alert to teacher tacit knowledge that may have developed around ineffective practices and customs (Nutley et al., 2003). The use of student achievement

data to monitor each stage of the implementation of an EBP would be a crucial element in determining the effectiveness of the 'what' and 'how' of implementation in each unique context (Gersten & Dimino, 2002), and an integral part of a teacher's inquiry into the practice.

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